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ABSTRACT

In cooperation with the Hawaii 2000 Outdoor Education Center, a summer ecology course for teachers on the Island of Hawaii developed and conducted an environmental school in Hawaiian outdoor education for 18 children between the ages of 9 and 13. Thirteen teachers enrolled in a California State University field course in environmental education worked with the Hawaii 2000 group in setting up the course, conducting it, and at its conclusion, in compiling a curriculum guide for Hawaiian outdoor education. The course outline and requirements, teacher preparation, directions for class projects, timetable, evaluation methods, and supply and equipment lists were all included in the guide. The resident camping experience featured projects centered around three major topic areas: sun and sky, water, and land. The sun and sky classes included construction of a solar oven and sun clock, ozalid printing, and pinhole photography. In the water segment of the course, students learned how to snorkel, aquatic safety rules, adaptation techniques of marine animals to the rocky shore, and how to collect and press algae. The land activities included hiking, first aid, sing-alongs, non-utensil outdoor cooking, sand casting, sand painting, Japanese fish printing, and tie-dying. Although projects outlined in this guide are geared toward an Hawaiian setting, use of this document could carry over to Mainland outdoor education classes as well. (DS)

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HAWAII: Love or Leave It

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INTRODUCTION

Illustrations by

Estella J. Stephenson

Foreword

At CSUH, a course for teachers obtaining a master's degree in Environmental Education (T Ed 6417, Field Study in Environmental Education) requires that teacher who enroll conduct an innovative resident school for children. Just as the 1976 session was being planned, Mrs. Trudi Zelko of Hawaii 2000 visited Dr. Esther Railton of CSUH with a proposal for a summer ecology course for teachers on the Island of Hawaii. The two plans merged. Field trip arrangements were made through the CSUH Auxiliary Foundation.

The result was a one-week orientation, June 14-19, around the island led by a staff member of Hawaii 2000. The week following, June 21-26, was spent camping with children, led by teachers. The trip continued with four days of evaluation and further exploration on Oahu, and concluded with three days at CSUH writing and compiling a curriculum guide for Hawaiian outdoor education with suggested applications to teaching in California.

As a result, the following pages are respectfully submitted to Hawaii 2000 and the Hawaiian Department of Education for synthesis into their environmental curriculum planning.

Esther P. Railton and Edward
Railton, eds.

Class: Field Study in Environmental Education.
Department of Teacher Education

California State University, Hayward, 1976

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Collecting and Pressing Algae

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T Ed 6417, Summer 1976 Esther Railton

COURSE OUTLINE AND REQUIREMENTS

PART A	
May 11	Planning and get acquainted sessions
June 7	Establishment of course goals Prepare self with background reading
June 14 to 20	Orientation to ecology of Hawaii Culture of Hawaii Planning resident experience for children
Part B June 21-July 6	Conducting an environmental school for Hawaiian children Presenting curriculum proposal to Hawaiian Dept. of educ. Conversations at the University of Hawaii Visit to Polynesian cultural center Writing up curriculum proposal for Hawaii and about Hawaii for California

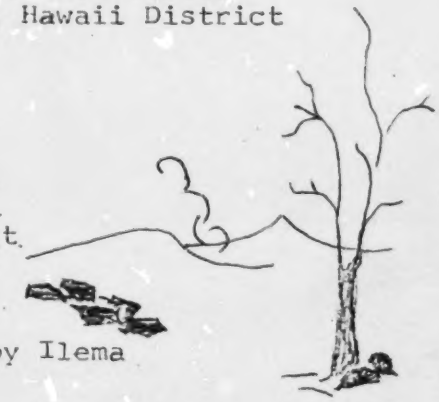
Requirements: A. Students will attend all sessions of preparation in Part B, participate in planning groups, help in organizing instructional procedures and goals for environmental school, help in materials preparation. Formal sessions begin June 14.

B. Work with team to conduct resident environmental experiences for Hawaiian children. Be responsible for supervision of all day and night activities of an assigned number of these children.
Plan and conduct at least one environmetally-oriented class for all of the children in the school.

Write up the class conducted as a teaching mini-unit: objectives, materials, procedures and evaluation. Environmental concept where appropriate.
Help with organization and editing of book, addition of introductory material if necessary.
Help with assembling of curriculum guides.

STUDY OF HAWAAIAN ECOLOGY BY CALIFORNIA TEACHERS

June 14 Met Hawaii 2000 staff at Hilo
Visited Hawaii 2000 Outdoor Education Center
Talked with Mr. Shuichi Tanaka, Hawaii District
Department of Education
Volcanoes National Park
Kalauea Crater
Ainahou Group Camp



June 15 Halini Pali
Caldera rifts
Lava Flows, tube and rain forest
Tree molds
Bird Park nature walk
Pauahi Crater
Talk on Hawaiian folk history by Ilema

June 16 Mauna Iki "Earth burps"
Punaluii Coast
Kilauea Iki
Punaluu Black Sands Beach
South route to Institute for Gifted Students

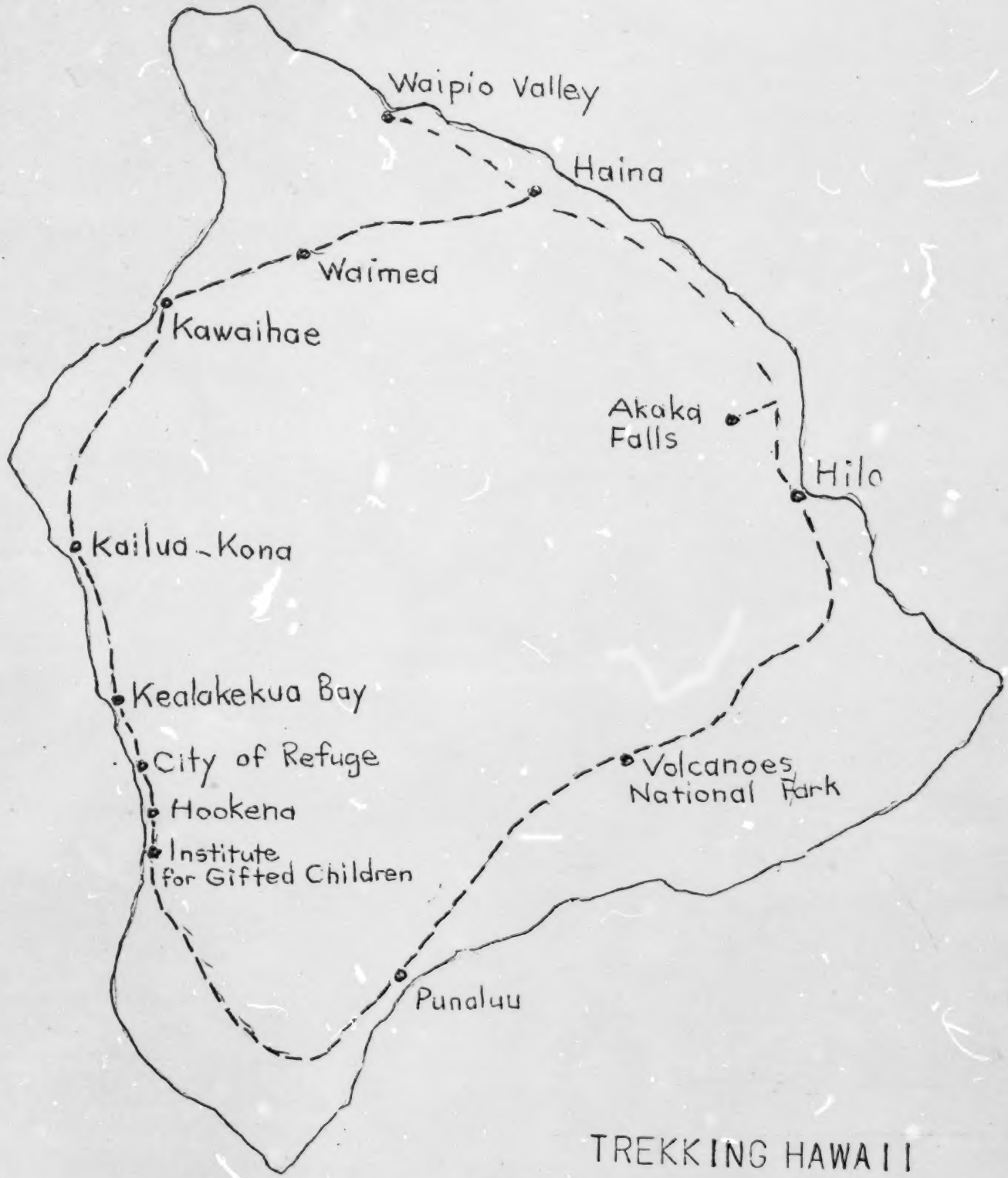
June 17 City of Refuge
Kealakekua Bay, Captain Cook's Monument
Kona Coffee Mill

June 18 Waipio Valley
Ti House, Beach
Desert southern sky

June 19 Curriculum meeting at Institute
Cleaned dorms, readied school for children
Shopped for supplies

June 20 Spencer Beach in Kawaihae
Puukohola Heiau, historical site
Luau
Slides of Spencer Park human and natural history, by Jim

June 26-30, Akaka Falls
Hilo Japanese gardens
Honolulu, Oahu
Polynesian Culture Center
Bishop Museum
Art gallery
Beaches
Pali
University
Pearl Harbor
Waoli Tea Room
Conferences with Mr. Miles Muraoka and Mrs. Trudi Zelko
Science Specialist, State Department of Education
and Mrs. Trudi Zelko, Hawaii 2000



TREKKING HAWAII

Hawaii Outdoor Education Goals and Methods

Goals	Methods
To open communication through listening literature personal experience	Interdisciplinary Process Discovery
To have new experiences	
To develop a sense of self awareness through common experiences through sharing cultural heritage	
To become more aware of the Hawaiian environment by: studying and understanding its fragile balance its relationship between self and environment interrelationships and function of its parts	
To accept individual responsibility in group situations	

Schedule

	Monday	Tuesday	Wednesday	Thursday	Friday
8:30 Breakfast	Arrival Assign groups Orientation Name Tags Select Group names	Poi Pounders set-up Council 1. Nature Hike 2 & 3 Snorkeling tidepools Water Safety	Significant ten set Council 1. Solar cooking 2. Ecology flag 3. Hike - first aid	Breakfast cookouts 1, 2 tidepools 1 sandcasting, pressing pictures 3 solar experiments oven, clock ozilid prints	Poi Pounders set-up awards & evaluations Art Faire Pack and clean - Resin Casting Pinhole cameras
12:00 Lunch	Poi Pounders set explore 3 Sensory hike 1 Insect collecting Sand painting	Beach Picnic tidepools Water Safety Snorkeling	Alii's set-up Beach- sandcasting snorkeling	Alii's lunch set-up 1. Pinhole cameras 2. exploratory music 3. free time, art	Significant 10 set-up Goodbyes & Alohas Evaluations (Staff)
5:30 Dinner	Significant 10 set Campfire	Alii's set up 2 Indigo dying 1 Chromotography 3 Art - nature craft Body building	Cook-out Hookena Beach	Poi Pounders set-up Astronomy Slides of California	
8:00 Bed	Ed Estella	Larry Sally	Herb Mardi	Mike Ann	

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CAMPERS

Group 1

THE POI POUNDERS

Scott Causey (11)
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Hi

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CAMPERS

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THE SIGNIFICANT TEN

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CAMPERS

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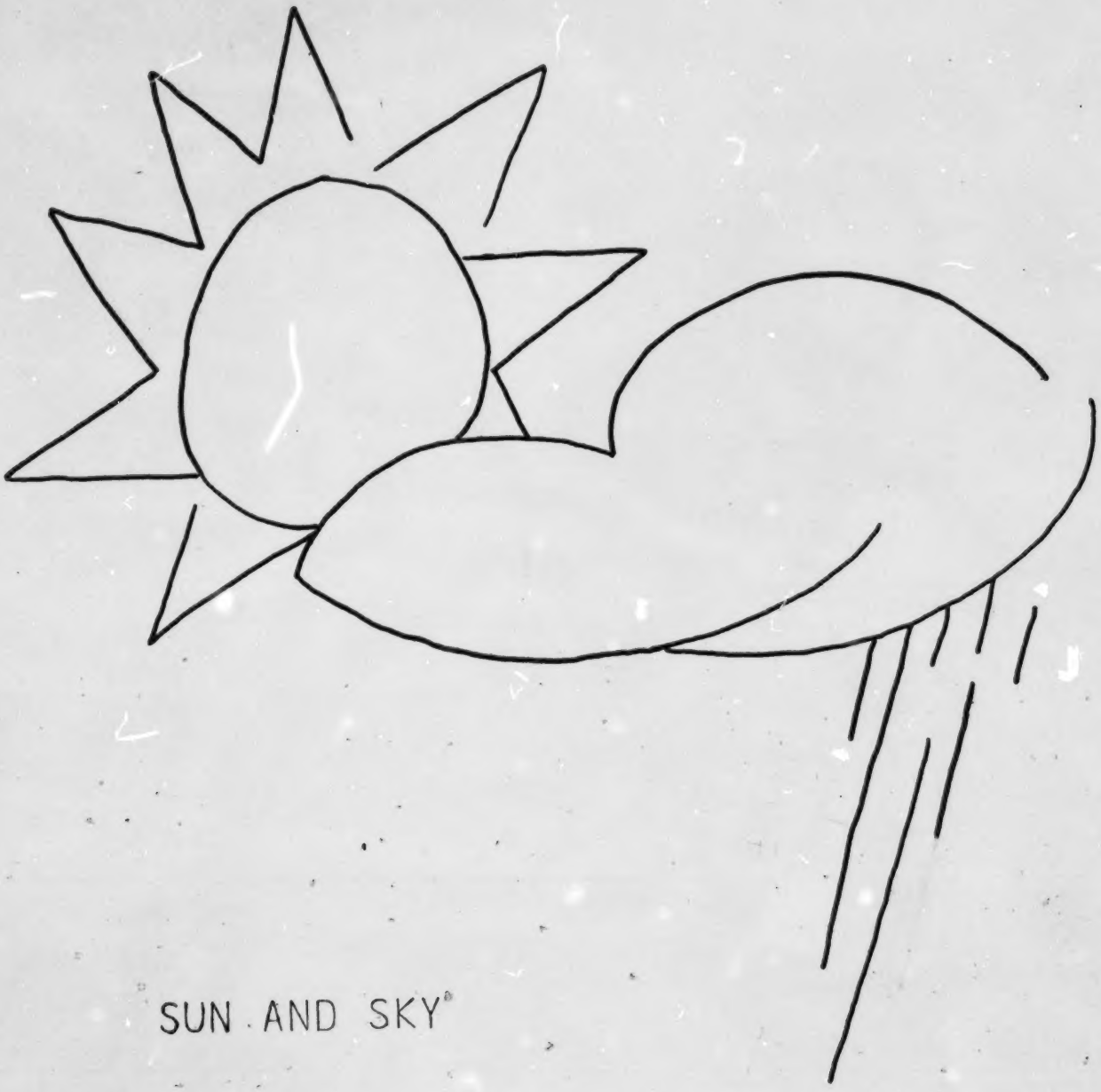
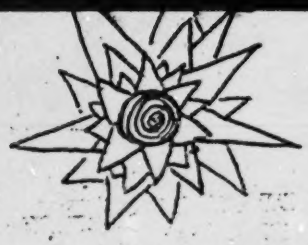
Kamuela, Hi



SUN AND SKY



Title: SOLAR OVEN by Michael Schoop

Concept: Solar energy can be tapped and used as heat energy by the construction of a simple solar oven.

Specific Objectives:

1. The student shall demonstarte knowledge of two types of solar energy; heat and electricity.

2. The student will be able to determine the qualities of materials enabling it to reflect or absorb solar energy.

3. The student, through experimentation, shall determine the efficiency of various materials relative to building his/her own solar oven

4. The student will be able to build a solar oven.

5. Thestudent will be able to cook food with his/her solar oven.

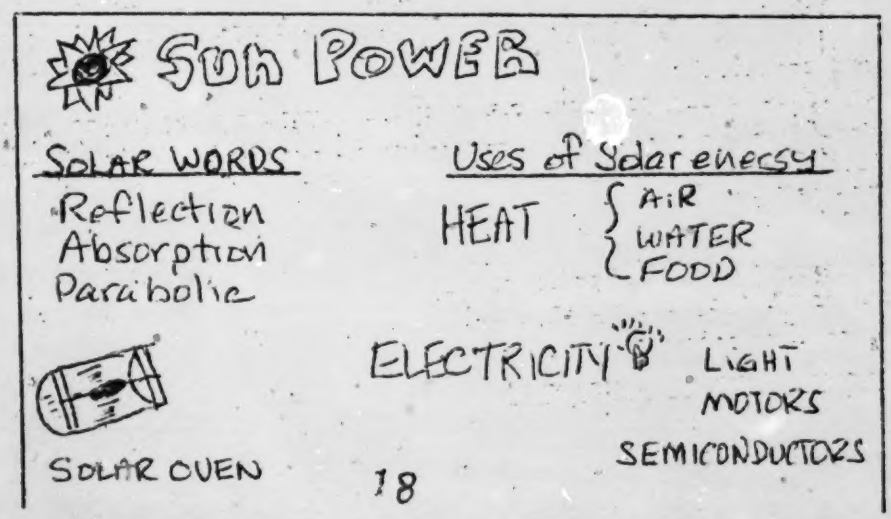
6. The student will be able to realize the draw-backs of solar energy regarding environmental obstructions.

Materials-Specific

1. Aluminum foil (smooth)
2. Aluminum foil (one side painted flat black)
3. White glue
4. Cardboard (file folder thickness) One piece $8\frac{1}{2}$x11", Two pieces 3x8".
5. Flat black spray paint
6. Scissors
7. Coat hanger (metal) One hanger makes two ovens.
8. Stapeler
9. Pen or pencil
10. Food. Hot dogs, pineapple chunks, marshmellows; apple slicers, cinnamon.

Materials-Resources

Make the following chart:



Procedure- Teaching Techniques

1. Lecture (using chart)
2. Experimentation
3. Demonstration

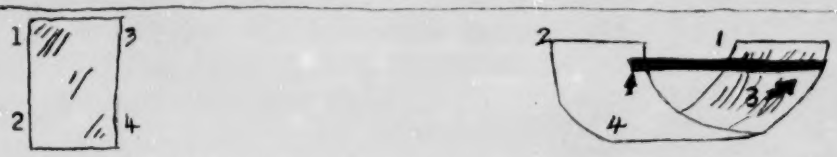
Procedure-Outline

Beforehand:

1. The teacher sprays aluminum foil with flat black paint (one side)
2. The teacher prepares 2" aluminum foil squares (black one side), one for each student for experiment.
3. The teacher prepares the food for cooking. Cut into small ½" chunks.

Lesson:

4. The teacher lectures on the usefulness of solar energy utilizing the chart.
5. The teacher begins the experiment by asking the students to predict which side of the 2" square will aborb heat, and which will reflect. Students experiment, and draw an conclusion, (which is used in actual cooking).
6. The student cuts out a 8½x11" piece of cardboard and glues aluminum foil, (not painted) shiny side out, to it. This is the reflector.
7. Two supports are then made. Two pieces of simular cardboard 3x8" are folded and stapeled to the relector. Reflector is bent into a parabolic shae. FIG. A.



Cardboard with foil Bent into shape

Connect 1 to 2; 3 to 4. Distance between numbers should be approximately 4". Staple supports through reflector side

FIGURE A

8. Cut an 1/8th inch tranglular groove in the center (top) of each support (This is to lay the skewer across). See FIG. B.

FIGURE B

9. Make aiming device out of cardboard and glue to top of support. FIG C.

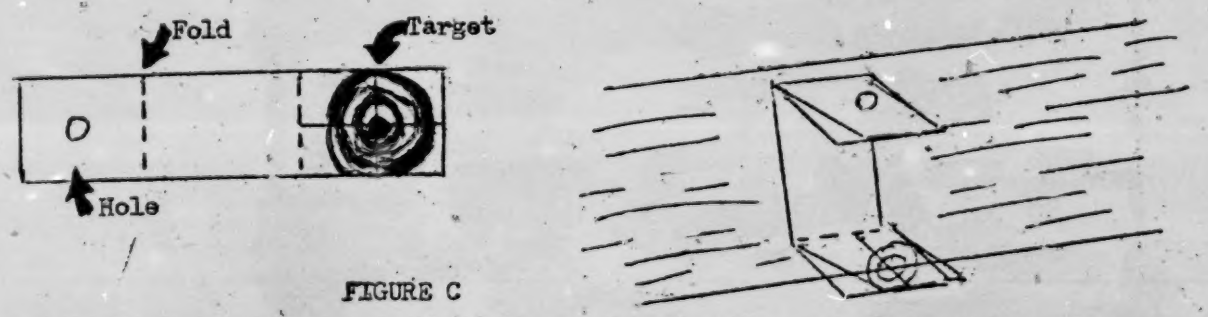
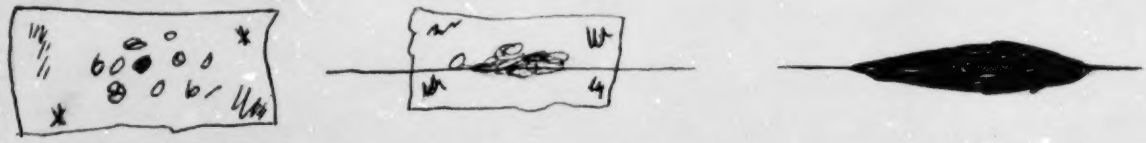


FIGURE C

10. Wrap food in foil, black side OUT. Place coathanger (cut and straightened) across top of food and seal. FIG. D.



Place food on foil Place hanger across food Fold over and seal

FIGURE D

11. Place food across support grooves. Using aiming device, point the oven toward the sun. The sunlight will enter the hole at the top if the aiming device and shine down upon the target. Make sure the aiming device is exactly parallel with the top of the support.

12. The food will be ready in 12-20 minutes depending on sun intensity.

13. Ask students to check ovens to make sure they have not been accidently moved. Students should be encouraged to feel the black foil while food is cooking. Students should take care not to burn themselves.

Evaluation Technique

Based upon the completion and sucessful operation of the individual's solar oven.

Follow-Up Activities

1. Take oven home for further experimenting
2. Read books about solar energy
3. Experiement with solar energy projects (eg., Radio Shack, Edmund Scientific Co.)
4. Design other solar type devices
5. Build a solar water heater
6. Experiment with magnifying glasses
7. Take the temperature of the black foil with centigrade or oven thermometer. (DO NOT USE REGULAR THERMONETER!)

TIME ALLOTMENT: $1\frac{1}{2}$-2 hours

Title: SUN CLOCK by Sally Scholl

Concept: One can tell the time by using the shadow of the sun.

Specific Objectives

The student will be able to:

1. Show skills of manipulation in constructing this project.
2. Find logitude and latitude on a map, specific to his/her location.
3. Show skill at finding "north" by using a compass or map.
4. tell the correct time by the use of the clock.

Materials-Specific

1. Translucent Coffee can lid (or simular)
2. Sharpened pencil
3. Black marking pen
4. World map (globe)
5. Compass
6. Protractor

Materials-Resources

Caney, Steven, The Play Book, Workman Publishing, N.Y.,N.Y., C 1975, pp 166-68
World Map or Globe

Procedure-Teaching Techniques

Lecture
Demonstration
Discussion
Experimentation (Finding north)
Research (Longitute/Latitude)

Procedure-Ouline

1. Using marking pen, draw two perpendicular lines through the middle of the circle creating 4 equal parts. (Fig. A)
2. Divide each segment into two, making 8 equal parts. (Fig. B)
3. Draw two lines within each segment making 24 equal parts. (Fig. C)
4. Mark numerals on dial. (Fig. D)

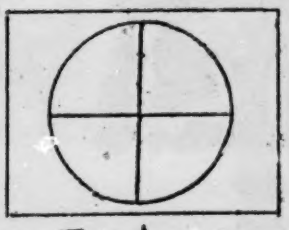


Fig. A

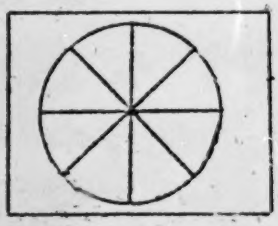


Fig. B

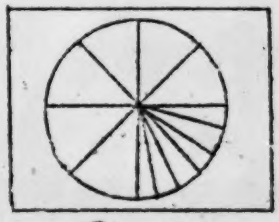


Fig. C

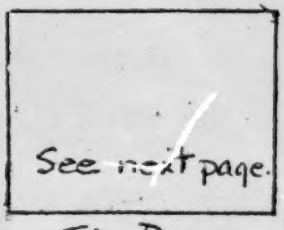
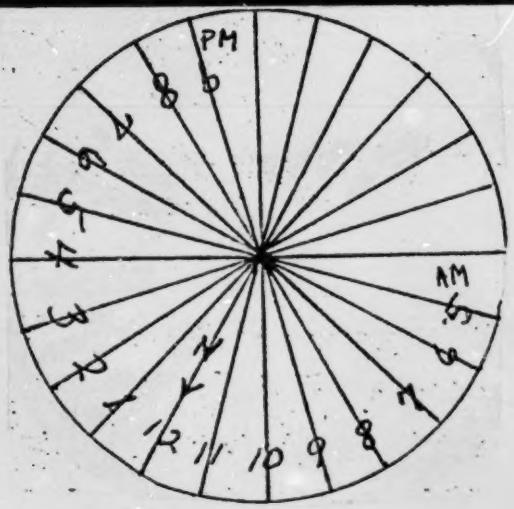


Fig. D

Fig. D



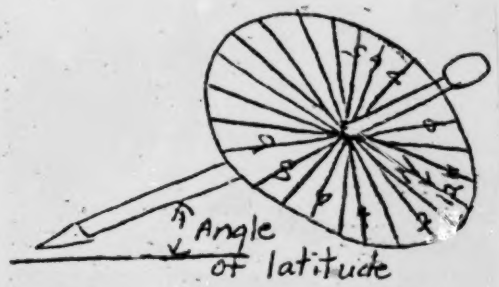
5. Poke the pencil through the center of the clock, halfway.
6. Set the clock at the proper angle, the degree of latitude where you are. (Fig. E)
7. Point 12 toward NORTH and at the bottom on the clock.

Evaluation Techniques

Check the sun clock time with the correct watch time.

Follow-Up Activities

1. Make a permanent sun dial out of wood or other material.
2. Design and build other kinds of time telling devices.
3. Read about different methods of telling time down through history.



Title: OZALID PRINTING by Sally Scholl

Concept: Photo printing can be made simple and inexpensive.

Specific objectives

1. The student will make a nature photo print using simple supplies.
2. The student will define the terms exposure and develop.
3. The student will be able to wzplain the basic ozalid process.
4. The student will compose designs.

Materials-Specific

Ozalid paper, sun, natural leaves, twigs, shells, etc., ammonia (best is Baume 28%-industrial strength, but regular household ammonia works), 1 cup size container or sponge, 2 #5 cans or 1 gallon bottle with wide mouth.

Materials- Resources

Blue print shops.

Procedure-Teaching Techniques

1. Demonstration
2. Practice

Procedure-Outline

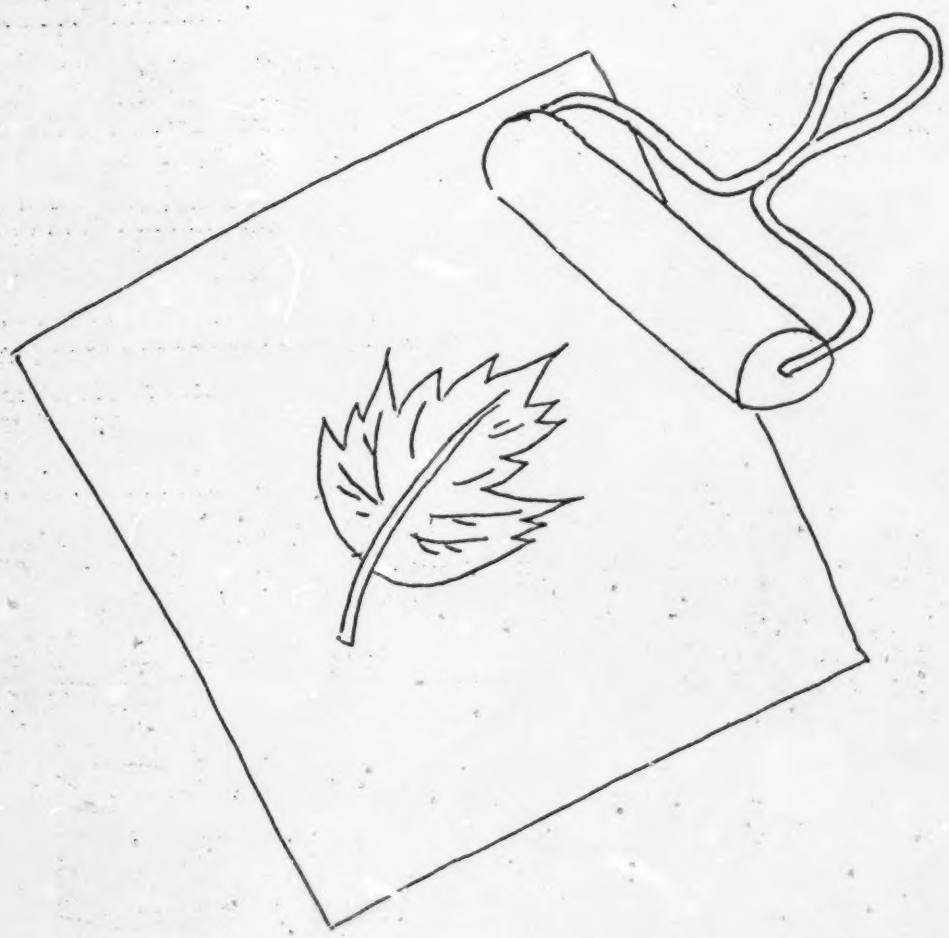
1. Gather natural objects and plan composition.
2. Caution: keep all paper in dark container until ready.
3. Lay objects on ozalid paper and place in direct sun. It takes only a few seconds to expose, but it cannot overexpose.
4. Roll paper with exposed side in and place in developing can.
5. Remove print. The less strength the ammonia has the more developing time required.

Evaluation Techniques

Instant, magical feeling of success is experienced by students.
Students gain desire to make many more prints.
Students learn about photo chemistry.

Possible Follow-Up Activities

Students do other photographic work such as composition, lighting, camera work and developing.
Students create ink and roller prints of natural things.
Students make rubbings of natural things.



PINHOLE PHOTOGRAPHY

by Ed Carmo

Concept

To "capture" an aspect of the environment

Objectives

Students will measure and cut materisls.
Students will construct a pinhole camera.
Students will mix chemicals for darkroom.
Students will explain structures of the camera.
Students will be able to control exposure of negative to light.
Students will demonstrate ability to develop a negative.
Students will demonstrate ability to make positive print from a negative.
Students will be able to produce one or more positive prints.

Materials

Each student will need access to the following materials: flat sheet of light cardboard or heavy tag board, aluminum foil, masking tape, pin, single edge razor blade, pencil, ruler.
Instructor will provide the following materials: dektol, fix, 4 developing trays, 3 tongs, blotter book, red safety light, paper safe, darkroom, negative paper(get box of 100 sheets 4"x5", then cut to 4"x2½") polycontrast F or Kodabromide #3, positive paper "Velox" (same size as above)

Teaching Technique

Teacher explanation

The purpose of a camera is that it is a device to control the amount of light that strikes sensitive paper. This amount of light is critical to avoid underexposing or overexposing the sensitive paper. Once the paper has been exposed to light, it has to be put through a chemical process called "developing" in order to make the image visable. This image will be a reverse one -- that is, black will appear white and white will appear black. Once a satisfactory negative has been obtained, the next step is to provide a positive. A positive is made by a contact process using a different light-sensitive paper, and developed the same way as a negative.

Use of Materials

1. Construct camera to given dimensions.
2. Set up darkroom, prepare chemicals.
3. Test camera for light leaks.
4. Develop test negatives.
5. When camera and darkroom okay, students "capture" environment.
6. Process and print positives.

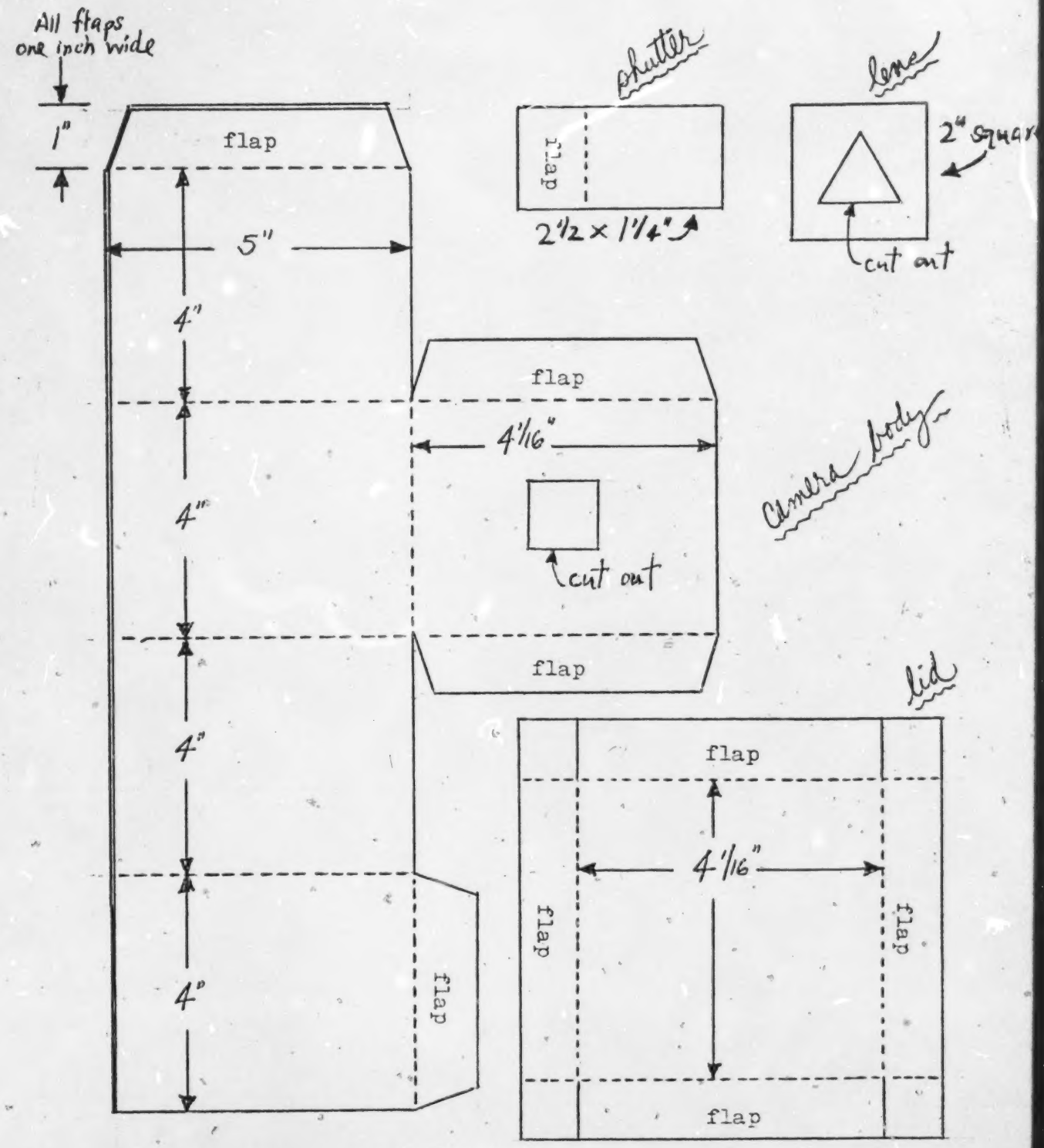
Evaluation

The production of a clear positive print containing an identifiable object is the evaluation objective.

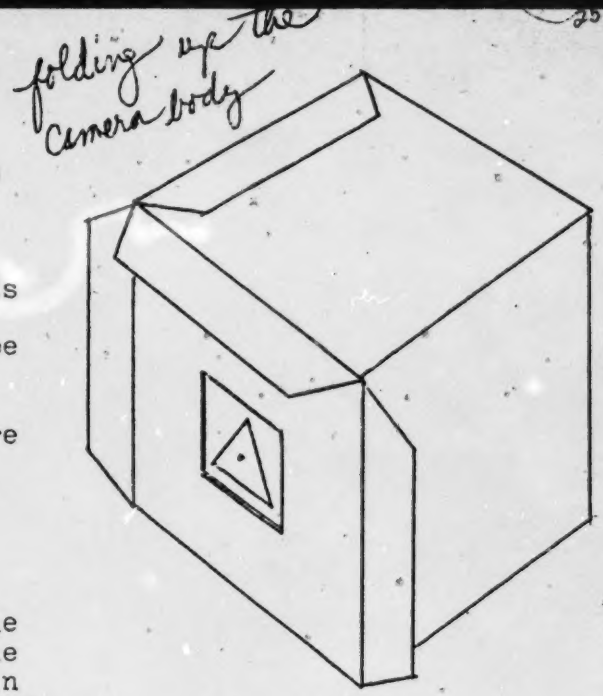
Follow-Up :

1. Make cameras out of different shaped boxes (i.e., Quaker Oats round box).
2. Use your prints to illustrate a report.
3. Capture a series of events in the environment and order them.
4. Use vegetable dyes in stop bath to tint your prints.

Pinhole Camera: Construction Details

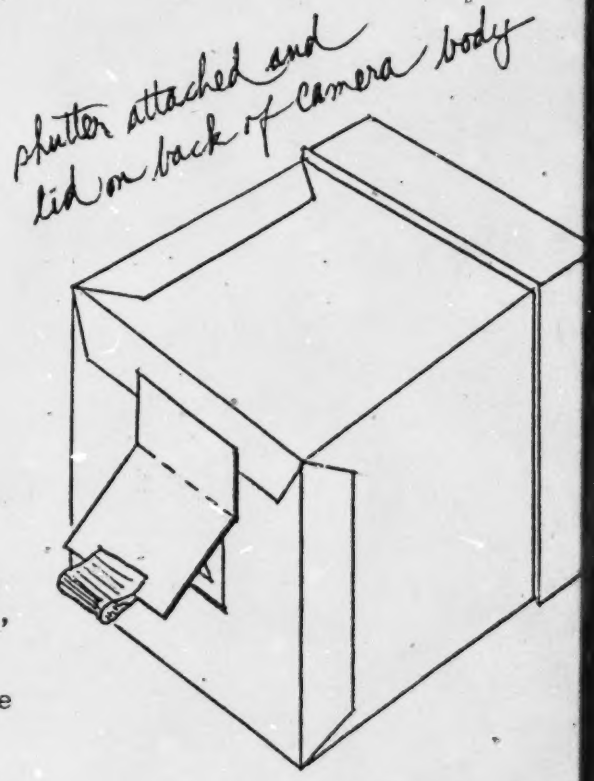


Making the Camera:



You will need a piece of light cardboard or heavy tag 9 x 17" for each camera, and a square 6 1/8" for each lid. Keep scraps to make the shutter and pinhole lens. Measure and cut cardboard as in the diagrams. Use a razor blade to aid in making sharp folds along the dotted lines. Cut out small square in camera body. Tape foil over triangle cut in lens, make a pinhole in the foil, and center the pinhole over the square cut. Tape your completed lens here so the pinhole is centered in the square.

Check all corners and edges for light leaks. Use black tape and glue carefully when assembling the camera. Cut out cardboard for the lid, and fold and glue together in similar method. DO NOT PERMANENTLY ATTACH THE LID TO THE CAMERA. Put a small loop of masking tape inside the lid so you can anchor negative paper for picture taking.



Darkroom Setup:

Number your trays 1-4 from left to right. Follow package directions in mixing Dektol and Fix.

tray 1 DEVELOPER (Dektol)
tray 2 STOP BATH (water)
tray 3 FIX (Fix)
tray 4 WASH (water)

A red safe light may be used.

Procedure:

Keep cut film in a paper safe (a small closed box) in darkroom. Keep only 10-15 negatives at a time in it, replenishing by cutting 4 x 5 paper from its container as needed. Red light may be on in the darkroom. The student gets negative, attaches it (shiny side toward pinhole) to tape loop inside lid, closes camera with lid, places camera against stomach with finger holding down shutter. MAKE SURE NEGATIVES ARE "SAFE" BEFORE ANYONE LEAVES DARKROOM. Student leaves to make exposure.

Exposing Negative:

Sunny days are best. Student keeps camera absolutely stationary and aims camera at a stationary object. Shutter is lifted and

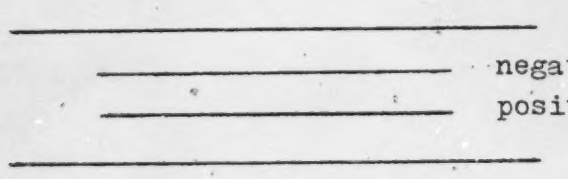
held open for 30 seconds. Student drops shutter and returns with closed camera to darkroom.

Developing Negative:

In darkroom, under safe light conditions, remove negative. Place negative in tray 1 until developing begins. Move the negative to tray 2. If more developing is desired, return negative to tray 1. After 10 seconds, move negative from tray 2 to tray 3. After one minute, move the negative to tray 4. When the negative is in tray 4, white light may be turned on. Leave the negative in tray 4 for an hour, then place it in a blotter book overnight to dry.

Making A Positive or Contact Printing:

In darkroom, under safe light conditions, place a dry negative face down against the shiny side of positive paper (Velox). Make a "sandwich" by placing this between a piece of glass and a cardboard backing. This keeps the negative flat against the positive. The back of the negative should be against the glass as in the diagram below:



Turn on the white light and "expose" the sandwich for 10 seconds. Turn off the white light, open the sandwich, and develop the Velox positive paper exactly the same as you did with the negative. If your negative is good, you may make an unlimited number of positives (contact prints) from it. Vary the exposure time to white light to improve the quality of your positive.

STAR TREK

By: Ed Carmo
Estella Stephenson

CONCEPT

Constellations are star patterns recognizable in the sky.

OBJECTIVES

Students will listen to Greek myths (and myths from other cultures) about constellations.
Students will define terms constellation, magnitude.
Students will explain speed of light as a measure of distance.
Students will construct star trek viewing box.
Students will prepare set of constellation cards for viewing.
Students will recognize constellations after using star equipment.

MATERIALS

Each student will need:
Pencil, ruler, glue, construction paper, pin

Instructor will provide:
Set of ditto constellation cards, astronomy reference works, constellation books, background information on mythology, navigation, modern usage of "star power".

TEACHING TECHNIQUES

Motivate students through Greek mythology as an explanation for the constellations; myths from other cultures; the use of stars as fixed objects in aiding the navigation of ships and airplanes; light from star Arcturus used to activate photo-cell controlled gates to open and close 1933 World's Fair in Chicago.

USE OF MATERIALS

1. Construct star trek viewing box
2. Demonstrate use of constellation cards
3. Students use pin to prepare constellation cards for viewing
4. Study constellations through individual manipulation

EVALUATION

Use overhead projector and constellation cards in random order to enable students to demonstrate ability to use discrimination in identifying constellations.

FOLLOW UP

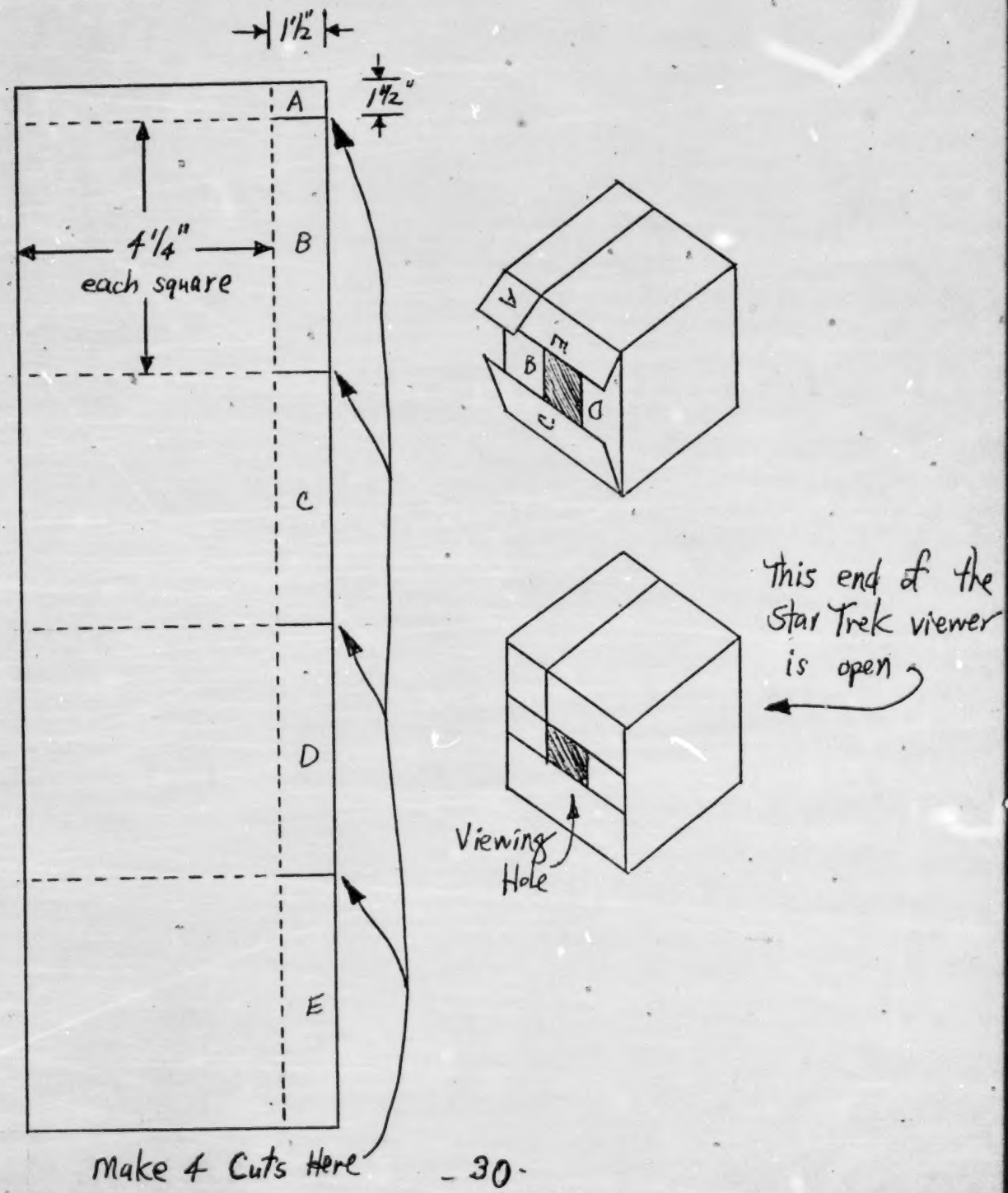
1. Construct constellation cards for the different seasons
2. Construct constellation cards for the southern hemisphere
3. Measure time-distance for a selection of stars.
4. Predict what constellations will look like in the future
5. Write own myths for constellations--and/or invent new constellations
6. Create own star patterns as viewed from another planet or galaxy
7. Research to find explanations for astronomy/constellations from other cultures.

TO BE ATTACHED: 1. Pattern for constructing star trek viewer
* 2. Set of 8 constellation cards

* For best results, reproduce or mount on opaque paper.

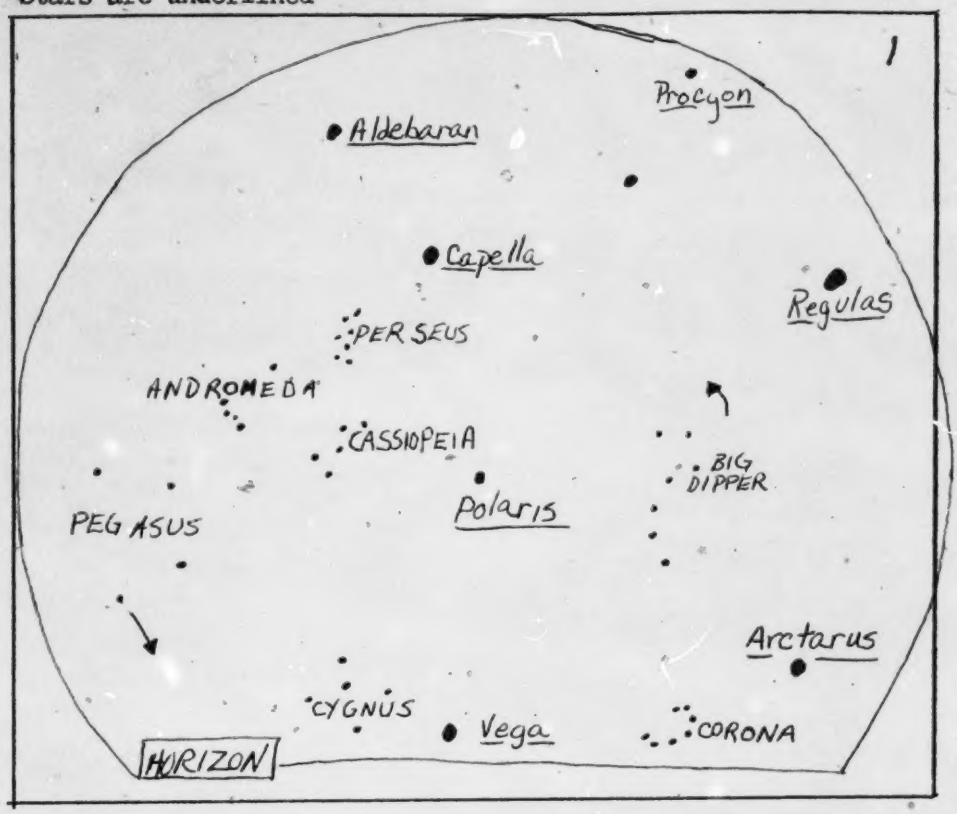
STAR TREK---Making the Viewer

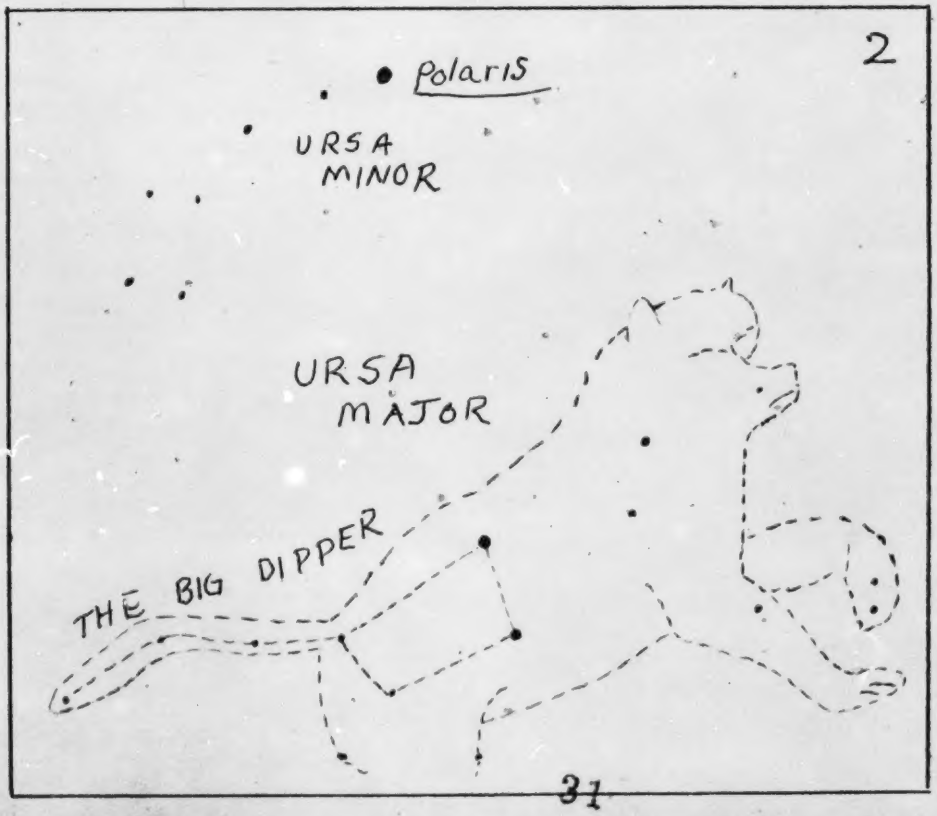
You will need a piece of construction paper 5¾ x 18 inches for each viewer. Measure and mark the paper as indicated on the diagram below. Fold along the dotted lines and make 4 cuts along the solid lines. Fold the paper to make a box and glue to make your completed Star Trek Viewer. Hold a constellation card against the open end, hold the viewer up to a light, and look through the viewing hole.



STAR TREK CONSTELLATION CARDS

Constellations are in capital letters
Stars are underlined





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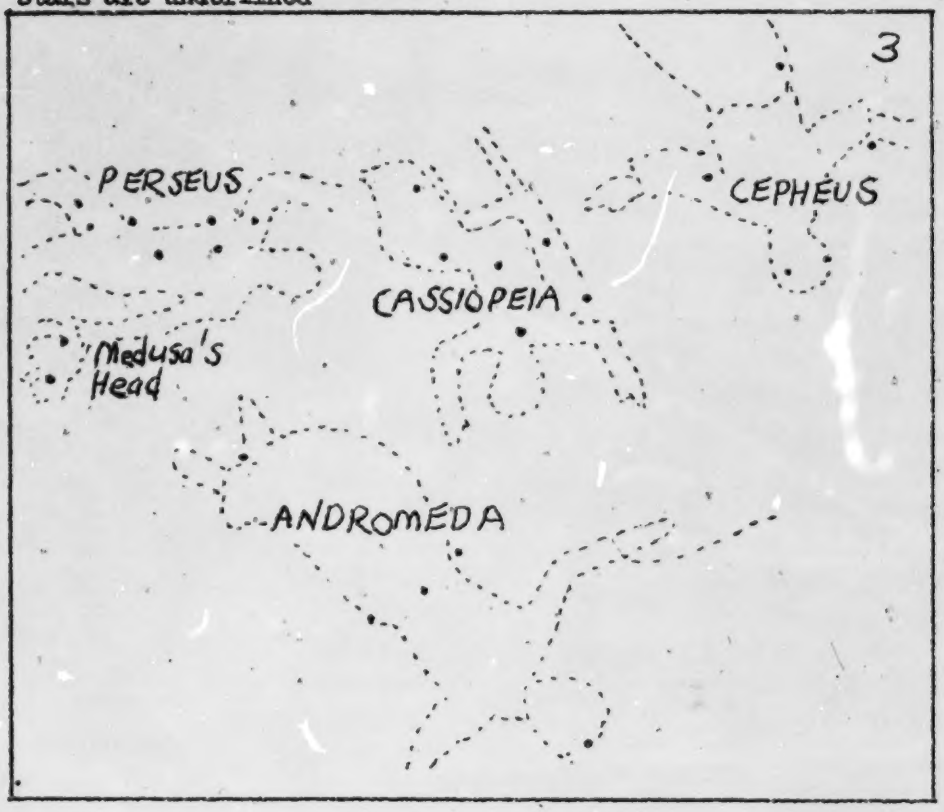

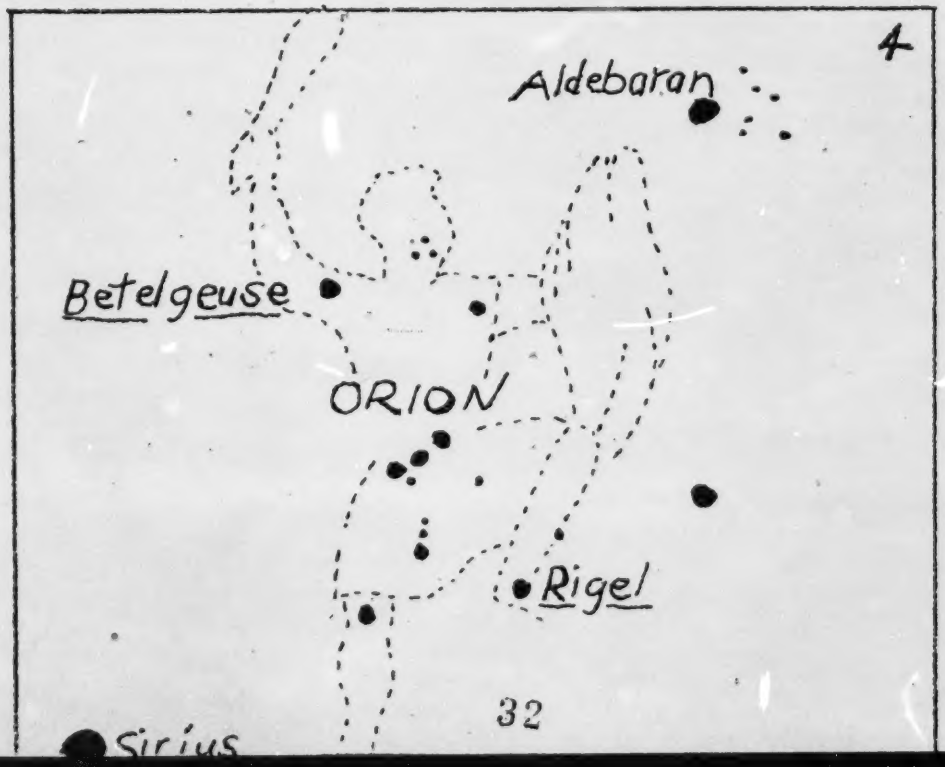

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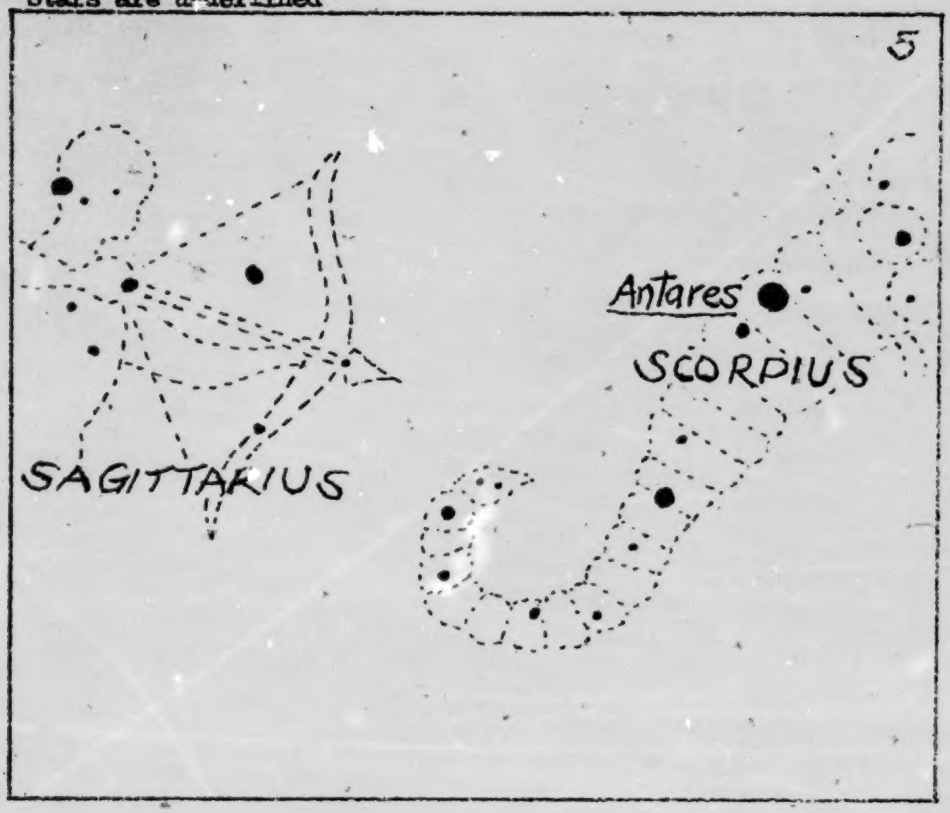
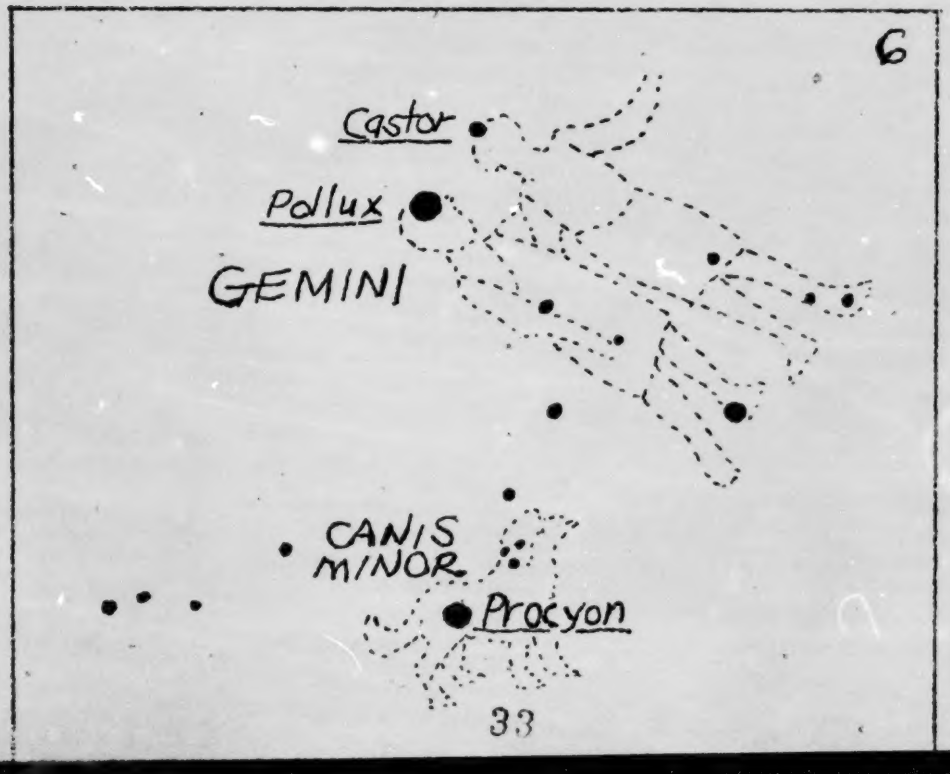
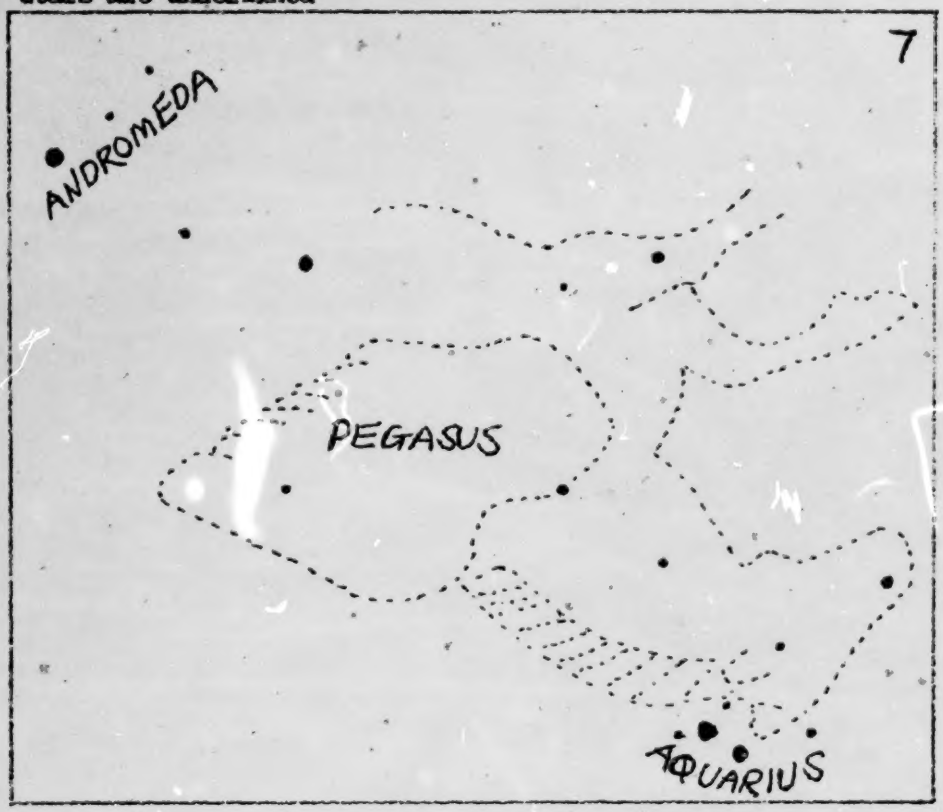
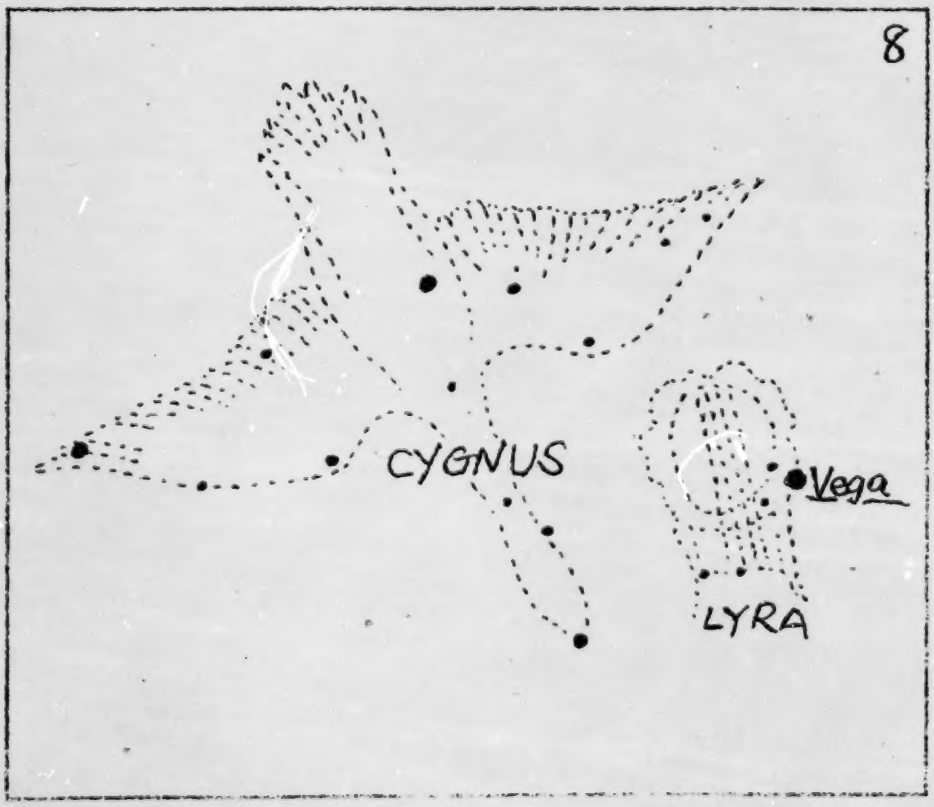




Constellations are in capital letters
Stars are underlined





WATER

AQUATIC SAFETY

by Art Johnson
Mardi Lasell
Sally Scholl

GOAL

To create a better understanding of aquatic safety.

OBJECTIVES

The student will:

- become acquainted with basic water safety procedures including safety measures, use of equipment, and evaluation of terrain.
- have his ability assessed so that he can become aware of his limitations.
- be allowed, upon instructor approval, to experience snorkeling and diving techniques.

MATERIALS

Specific

Beach area, Water Safety Instructor training method or equivalent method, snorkeling equipment.

Resource

Red Cross Water Safety Manual, Red Cross Publications, Phil., 1973, available through local Red Cross offices, any local information on beach terrain (usually available from local park commission.)

PROCEDURES

NOTE: These steps should be taken only by trained Water Safety Instructors.

Teaching Technique

Lectures, demonstration, observation, and practice in group situations.

Use of Materials

Explain water safety rules before any student is allowed to enter the water. Cover buddy system (always remaining with a buddy), emergency rescue procedures (means of contacting trained rescue personnel), equipment usage (know what lifesaving equipment is available on site), and boundary limits (to be set at the discretion of trained personnel by analysis of reefs, depth, and student's ability.

The instructor will observe the student's performance during swimming tests. Test will include distance (ability to swim ¼ mile), endurance (200 yard swim non-stop), and stationary performance (treading water for a two minute period).

The instructor will explain and demonstrate the proper handling and use of fins (how to adjust and put on), mask (how to adjust and put on in land and water), and snorkel (how to adjust to the mask).

The instructor will demonstrate underwater safety measures including surface dive, the release of pressure within the ears, clearing of snorkel upon surfacing, and cave and crack exploration.

EVALUATION

Evaluation techniques include verbal quizes on procedures and observation or pupil performance.

FOLLOW-UP ACTIVITIES

The study of underwater habitats.
Water Safety Instruction (Red Cross sponsored) course offering.
Introduction of Scuba Diving techniques
Reef exploration and sampling methods

ADAPTATION OF MARINE ANIMALS ON THE ROCKY SHORE

By: Larry Chin
Ed Carmo
Connie Edwards

CONCEPT

Animals live where they live because they adapt successfully to their environment.

GRADE LEVEL: Upper elementary - secondary

OBJECTIVES

After exploring the tidepools, the student will be able to :

1. Identify the environmental conditions under which animals of the rocky shore live.

   Examples of environmental conditions

   A. Wave action.
   B. Exposure toair (dessication) at low tide.
   C. Changes in salinity. (Fresh water from rain or water evaporating changes the concentration of salt in the tide pools)

2. Describe the ways in which animals adapt to environmental conditions on the rocky shore.

   Examples of structural and behavioral adaptation:

Environmental condition	Adaptation
A. Tide receding	Fishes, octopi, shrimp, and crabs leave the area as the tide goes out and seek other spots with more water.
B. Exposure to air	Snails withdraw into their shells, sea anemones pull in their tentacles, (body surface area is reduced), bivalves clos their shells tightly to retain water
C. Wave action	Sea slugs and other mollusks with muscular foot fasten themselves securely to rocks. Sea urchins, seastars, and sea cucumbers fasten themselves to roc with their tube feet. Mollusks and sea urchins have protectiv body structures (shells).
D. Changes in salinity	Bivalves can close up and retain sea water in their shells. Tide pool fishe can quickly adjust their internal salt balance.

ADAPTATION OF MARINE ANIMALS ON THE ROCKY SHORE - CONTINUED

MATERIALS

Hand lens.
Clear plastic bags approximately 12" X 18".
Reef walkers or tennis shoes to be worn by each student.
Fish nets.
Clip boards , paper, pencils for each student.
A large board - approximately 2' X 3'.

RESOURCE

An Instructional Guide to Tide Pool Biota, Shuichi Tanaka, Dept. of Education, Hawaii, 1970

PROCEDURE

1. Permit the students to explore freely in the designated area. The designated area should not be so large that the students are widely dispersed and cannot get to the teacher easily with their questions and discoveries.

2. Before the children are released to explore, discuss safety with them:
   A. Face the ocean at all times.
   B. Work closely with another classmate.
   C. Stay within the designated area.

3. After the period of exploration, have the group sit together near a tide pool, facing the waves.

4. Have each student make a list of names of animals they found on the rocky shore and have them make sketches of the animals they cannot name.

5. Have each student orally name an environmental condition the animals live in. List each one on the large board. From the list have the students point out the environmental conditions that affect survival of the animals on the rocky shores the most.

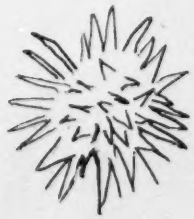
6. Ask how the structures and/or behavior of these animals adapt them to their environment.

EVALUATION

1. Oral responses to questions on adaptation.

2. Observation of organisms collected and displayed at the study site. Have students complete chart:

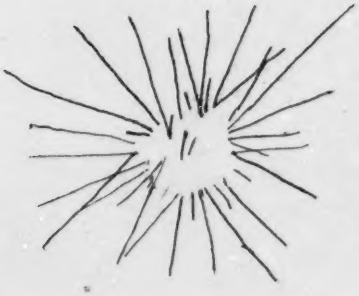
Organism	Environmental Conditions	Adaptation (Structure/Behavior)
Sea Urchins	Wave action	Attaches onto rocks with tube feet

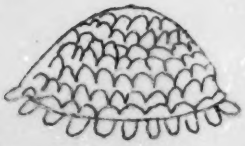


3. Essay: Write a composition on how shore organisms survive in their environment. Mention six animals and describe how they adapt to at least three environmental conditions.

4. Objective test - multiple choice

5. Draw and describe a make-believe animal and explain how it is adapted for its environment.





COLLECTING AND PRESSING ALGAE

By: Larry Chin

CONCEPT

Diversity is shown in the marine algae.
Marine algae can be easily collected from the rocky shore and can be readily pressed and mounted for future use.

GRADE LEVEL: Elementary - secondary

OBJECTIVES

The student will be able to collect algae from the rocky shores and follow proper procedure for pressing and mounting marine algae.

MATERIALS

Plastic bags (large size baggies
Shallow trays (approximately 2"x12"x16")
Wax paper
Herbarium paper
Blotter paper
Newspaper
Corrugated cardboard
Two pieces of cardboard
Two belts or ropes
Small paint brush

PROCEDURE

1. Check local beach collecting regulations.

2. To obtain a greater variety of marine algae, collect the specimens on a day with a minus tide.

3. Limit the collection of algae in the field to the amount that can be pressed at the laboratory within one or two days.

4. Demonstrate the following steps:

   A. Float the algae in the shallow tray. Slip a sheet of herbarium paper under the algae and slowly lift it out of the water, the front end first. If the algae have too many branches that overlap, remove a few of the branches.

   B. Lay the herbarium paper with the specimen on a sheet of blotter paper. Place a sheet of wax paper over the specimen so it does not stick to the other blotters that are placed on it. Next place a blotter over the wax paper.

   C. Put a layer of newspaper on each side of the blotters to absorb excess moisture from the plant. Next put a sheet of cardboard on each side of the newspapers to allow air to circulate.

   D. Repeat the above steps, A to C, for each speciment to be pressed.

   E. Place one piece of plywood on each side of the stack of prepared specimens and secure tightly with the belts or rope.

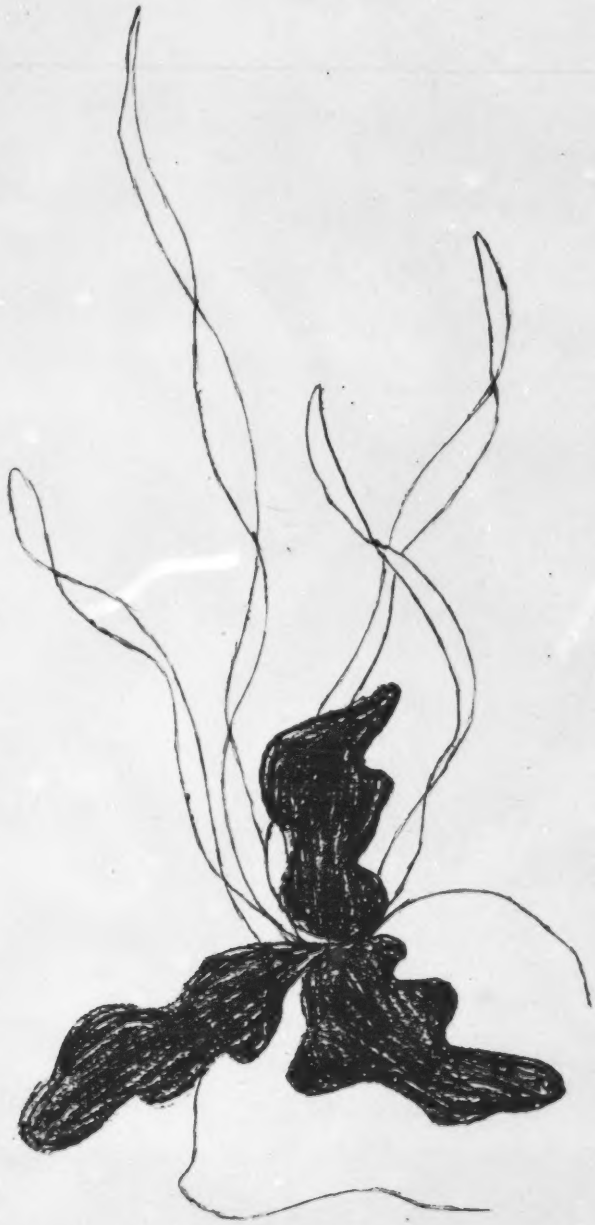
   F. Change the layers of blotter paper and newspaper once a day until the specimen and the herbarium paper are completely dry.

G. If the specimen does not stick to the paper, use white glue to fasten the plant onto the paper.

H. List the name of the plant and the place and date of collection the lower right corner of the herbarium paper.

EVALUATION

Each specimen will be mounted and labeled to the satisfaction of the teacher and student.



LAND

GETTING ACQUAINTED

Art Johnson
Herb Roberts
Estella Stephanson

Concept: Each person is a valid human being.

Specific Objective: Getting acquainted.

Materials:

a. Specific:
Clothespins, cardboard, pin-backings, leaves from "autograph" plant, paper, pencils, glue, felt pens, masking tape.

b. Resource
Values Clarification-Sidney B. Simons.

Procedures:

a. Self introduction.

b. Make name tags:

Clothespins with names written on in felt pen

Masking tape with names written on.

Small pieces of cardboard with parts of autograph leaves glued on and names written on leaves. Pin-back glued on back.

c. Get acquainted games:

1. Who Am I?

Put name on paper. On other side of paper, put answers to these questions:

a. Color of hair.
b. Color of eyes.
c. Color of shirt or top.
d. Age.

Mix papers and tape to each person's back. Divide into partners. By alternating questions, figure out who you are. First one to guess correctly is the winner.

2. Family Album:

On a piece of accordian folded paper, each person puts his name on the first fold. Then folds under and on each section writes a fact about himself, i.e. age, family information, hobbies, pets, etc. Without revealing the name on the "album", read the facts as listed and guess who the person is.

d. Get acquainted with the immediate area:

Explore the dormitory, dining room, library, restroom, play areas, kitchen, etc. Discuss rules and regulations.

e. Nature walk:

Have the children look for and collect things that are significant to their environment.

Getting Acquainted (continued)

Upon returning, they could glue their collection onto cardboard and label the items.

f. Sensory awareness:

Have the children observe the natural environment (the beach, steep hill, plants, birds, mountain, etc) by seeing, listening, smelling, touching, tasting.

Evaluation techniques:

Teacher observes the heightened awareness of children to their environment and everyone learns each others names.

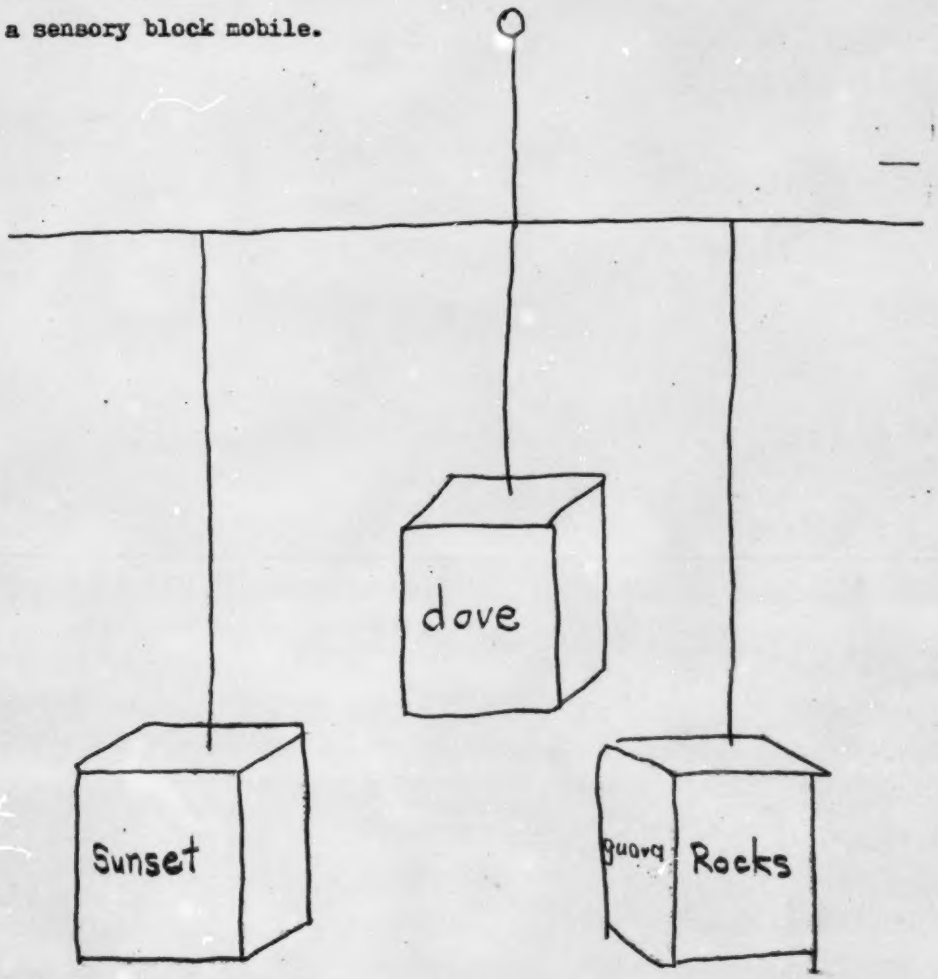
Follow-up Activities:

a. A blind walk with a partner.

b. Switch partners and replay games.

c. Develop a family tree.

d. Make a sensory block mobile.



HIKING AND FIRST AID

by Art Johnson
Mardi Lasell

GOALS

To become more knowledgeable about evaluation and the application of proper First Aid Techniques to injuries that may occur while hiking.

OBJECTIVES

The student will be able to demonstrate basic preventative first aid procedures applicable to outdoor situations.

The student will be able to evaluate, care for, and treat injuries.

MATERIALS

Specific
Hiking trails and Basic First Aid Kits

Resource
Red Cross First Aid Manual (available through local chapter) and training in Water Safety Instruction or Cardiopulmonary Resuscitation is beneficial.

PROCEDURES

Explaination of safe hiking procedures including: walking on the side of the road that faces traffic, walking in single file on roads when cars pass, and always having someone along that is familiar with trail or terrian .

Review preventative first aid procedures including footwear (make sure appropriate footwear is used and that it fits well), if "Hot Spots" appear, use vaseline or blister tape before blisters develop fully, to wear long pants and sleeves when when walking in thick brush area, being careful of sunburn, and always taking taking along a baci first aid kit (complete as per Red Cross Manual).

serious or life threatening injuries and situations in which they arise including:

Breathing stoppages (mouth to mouth resusitation)
victim should be lying down, should be checked for foreign matter in the mouth, head should be tilted back and neck lifted, nostrils should be pinched and mouth placed over victims , air should be blown in and victim's chest watched for rising, and breathing should be 20 times per minute for children and 12 times for an adult. Always continue until professional help arrives.

treatment of common injuries including
sprains using ice compression, elevation, and immobilization
Ice is best for immediate treatment for sprains. The coldness helps to reduce swelling and pain. Ice is not usually available on hiking trips, therefore, the other procedures are most important.

Compression will also help reduce the swelling, therefore, if victim has a sprained ankle it is advisable to leave boots or shoes on. There is no advantage in removing the shoe unless ther is severe bleeding. Sprains to other parts of the body may require an elastic wrap if available.

Elevation, an injury limb should be elevated to minimize blood flow that will cause swelling.

Immobilization. The injuried area should be restricted from any movement. Splints or padding may be used if necessary.

Fractures are not usually realized until the victim has had x-rays. It is important to treat any skeletal injury as if there may be a fracture. This can be done by

Ice, compression, elevation, and the immobilization techniques listed under sprains.

Compound fractures (bone protruding from the skin . Bleeding should be treated and then the injuried area should be splinted if possible.

Abrasions and insect bites. Any cuts, lacerations, or abrasions should be cleaned, an antiseptic used, and covered with a bandage.

Insect repellant may be used as a preventative procedure. It is important that bites are watched so they do not become infected. If they do become infected, antiseptic and bandages should be applied.

Transportation of injuried persons.

Any neck or back injury should be treated very carefully. No movement should be allowed unitl professional help arrives.

Injuried areas should be guarded in movement in the event of sprains or fracturs. Excessive movement may increase pain and tissue damage.

General procedures. Victim should always be encouraged to remain calm. a confident and assuring manner is desired when applying first aid.. An awareness of possible locations and facilities that may provide needed aid, care, and transporation, should be developed during the hike.

EVALUATION

Evaluation techniques include questioning (the insturctor may ask questions or give a short quiz, role playing (The instructor may design specific accident-like problems that the students must solve by following correct first aid procedures. The instructor will correct students mistakes as they occur or allow other students to make proper responses.

FOLLOW-UP ACTIVITIES

The instructor may wish to utilize the services of local groups or organizations trained to give first aid courses. Information about these services can be obtained from the National Red Cross.

Students might wish to enroll in Local Red Cross First Adi or Water Safety Insturctor"s course.

CHROMATOGRAPHY

by Art Johnson
Ed Carmo

GOAL

To aquaint the student with the plant structures that carry out the process of photosynthesis

OBJECTIVES

The student will
- be able to explain the simple photosynthetic process.
- be able to explain the process of paper chromotography.
- demonstrate paper chromotography technicues showing the separation of the light absorbing pigments contained within a leaf.

MATERIALS

Specific

Leaves from a plant, small jars, filter paper, Petroleum ether, and acetone

Resource

The techniques of paper chromotography may be found in many 8-12 Biology, Botany, or Chemistry texts.

PROCEDURES

The instructor will explain the process of photosynthesis.

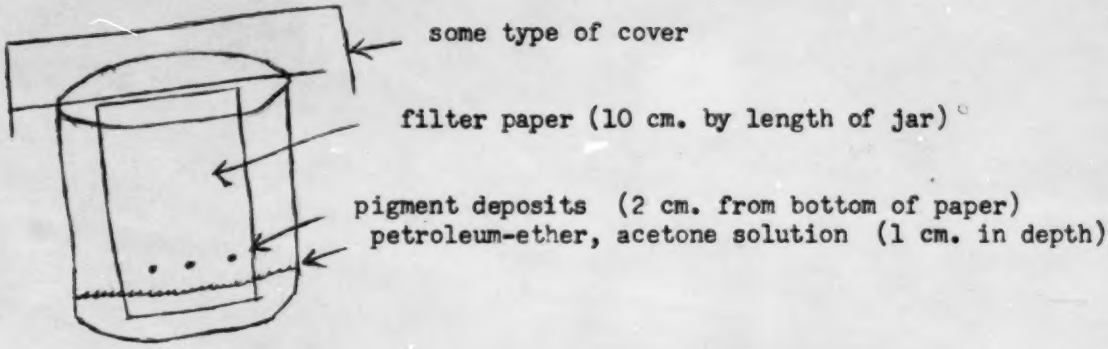
$$CO_2 + H_2O \xrightarrow[\text{Chlorophyll}]{\text{light}} O_2 \uparrow + C_6H_{12}O_6$$

Students will collect a few leaves from a plant or tree. The leaves should be broken into small sections and placed in a jar. Add a small amount (2 ml.) of 100Z acetone to the leaves and grind them until there is a thick fluid. The acetone extracts the pigments from the leaf.

Three drops about 2 cm apart should be placed 2 cm from the bottom of a piece of filter paper. This process should be repeated three times. This is to ensure a sufficient amount of plant pigment on the filter paper.

The filter paper is then placed in a small jar containing an acetone, petroleum ether solution. (9 parts petroleum to 1 part acetone) This solution should be about 1 cm in depth in the jar. Do not allow the solution to touch the pigments deposits. (a small pencil mark at the level of the pigments allows the student to know the starting position).

The filter paper is left for 30 minutes. A cover of some type (a larger jar or foil) should be placed over small jar with solution to prevent evaporation of the solution.



As the solution is absobed by the filter paper it takes the pigments in an upward direction . The different pigments will travel at different rates, therefor causing a separation between the various pigments within the leaf.

The following is the key for the pigments as they separate.

strong yellow - CAROTIN

pale yellow - XANTHOPHYLL

dark green - CHLOROPHYLL

light green - CHLOROPHYLL

light red - ANTHOCYANIN

EVALUATION

The instructor may ask questions about photosynthesis and paper chromotography. The students interpretation of the chromograph may be evaluated by the instructor. Lab procedures and techniques may also be evaluated.

FOLLOW-UP ACTIVITIES

Chromatography of other plant leaves (all red, all yellow, mixed colors).
Chromatography of amino acids.
Using chromatography to find the contents of an unknown solution.

NATURE WALK

By: Herb Roberts
Connie Edwards

CONCEPTS

1. Indigenous flora and fauna of designated areas can be identified.
2. Samples of parts of specific flora can be used artistically on a three dimensional tetrahedron

OBJECTIVES

1. Knowledge of the environment will be demonstrated, particularly animal and/or plant inter-relationships, also some of the uses of plants with curative powers
2. Awareness of the dangers of some plants will be demonstrated
3. A tactile tetrahedron of natural objects will be constructed

MATERIALS

1. Specific
   A. sketch pad
   B. pencil
   C. *tape recorder
   D. *camera
   E. baggies (large)
   F. light cardboard
   G. white glue

2. Resources
   A. Available expert on flora and fauna of area
   B. A Guide to Tropical and Semi Tropical Flora, by L.E.Kuck, 1975
   C. A Field Guide to Western Birds, Peterson 1969

PROCEDURE:

1. Discuss goals, limitations, and expectations of field study
2. Construct tetrahedrons (model below) on which collected natural specimens will be glued
3. Discuss different tactile possibilities of natural specimens, - soft, fuzzy, sticky, etc.
4. Discuss different colors found in nature.
5. Proceed on walk as planned, pointing out boundaries of designated areas.

6. Collect small amounts of seeds., for use on tetrahedron
7. Sketch plants identified

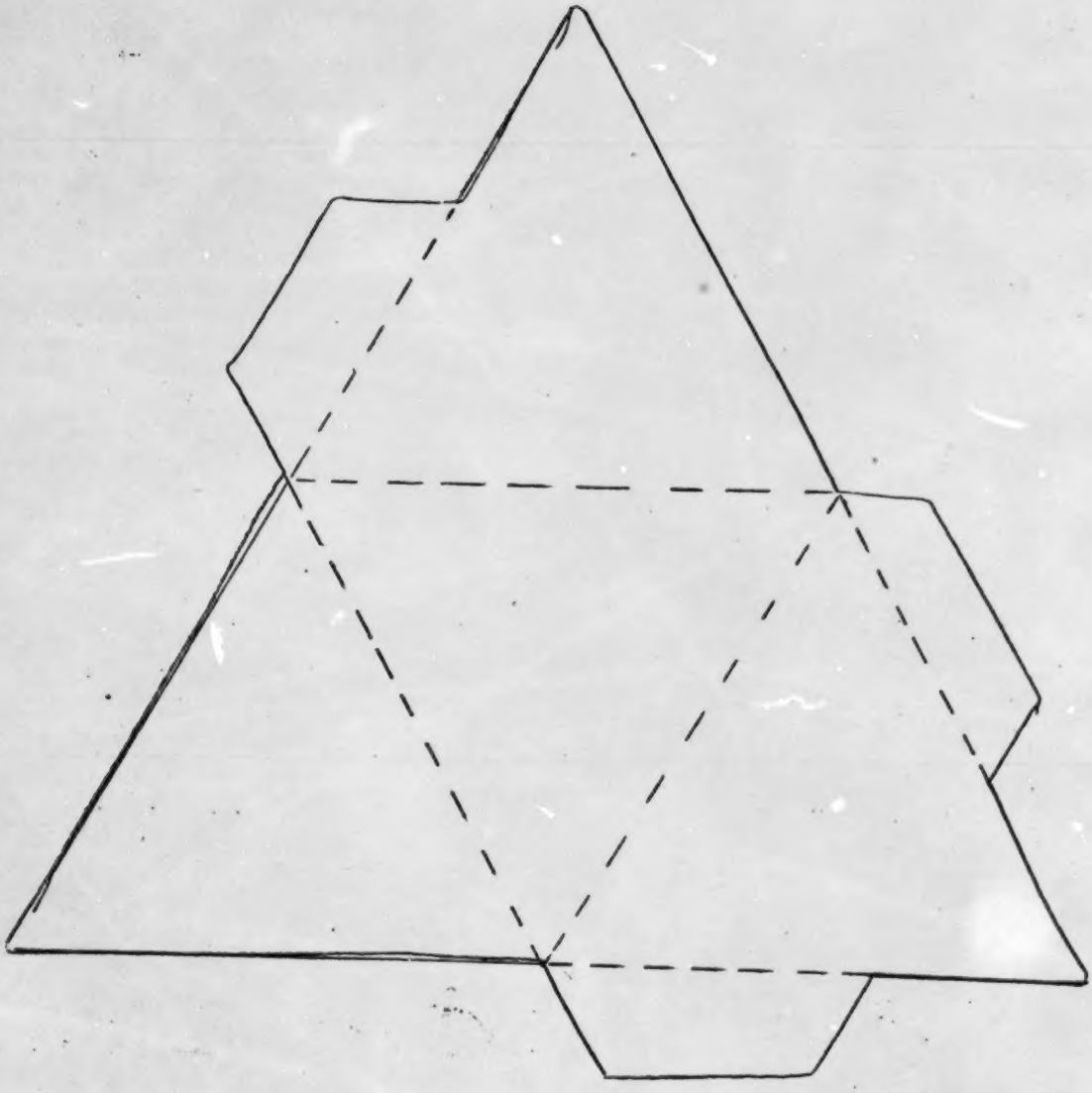
EVALUATION

1. Discussion of various plants identified and their uses and/or dangers
2. Comparison and critique by students of plant illustrations
3. Closure of tetrahedron activity

MYNA

MAILE

NENE



TETRAHEDRON

1. Cut out
2. Fold on dotted lines
3. Glue flaps

INSECT STUDY

By: Ed Carmo
Art Johnson
Connie Edwards

CONCEPT

To develop an awareness of the diversity of species in the insect world: color, size, niche in environment

OBJECTIVES

Students will demonstrate collecting procedures
Students will observe shapes and structures of insects
Students will draw body parts of insects and relate this to their function
Students will define important role that insects play in the ecological food chain
Students will compare color or shape of insects as camouflage devices

MATERIALS

Each student will need:
Net and/or a collecting jar

Instructor will provide:
*Killing jar, cardboard strips or balsa for mounting, needles, pins, labels, glue, reference books

TEACHING TECHNIQUE

Students assigned specific environment or area (niche) in the environment in which to collect

USE OF MATERIALS

1. Instructor will explain the concepts of environment, ecological food chain, and niche before students begin collecting
2. Students collect insects. You may require a "Field Journal" be kept in order to identify insect with its niche
3. Collected insects are placed in killing jar. Should a permanent exhibit be a goal, a "relaxing agent" should also be used for better appearing specimens
4. Students pin insects so they will dry out unshriveled. Dried insects then mounted with labels.
5. Insects should be labeled as follows: Class, genus, species, common name, name of collector, location of niche, date of collection. A key may be made to facilitate labeling.

EVALUATION

1. Students will demonstrate collecting technique for a swimming, flying, or burrowing insect
2. Students will identify structures of insects
3. Students will explain an ecological food chain
4. Students will describe functions of (special) structures of insects
5. Students will dramatize a protective structure or defense behavior of an insect

FOLLOW UP

1. Construct diorama showing stages of metamorphosis
2. Explain or illustrate evolution of species
3. Compare insectspopulations in differing environments
4. Hypothesize about insects on other planets, and their niche
5. Define most mechanisms in communicable diseases
6. Debate the use of chemical insect controls

*Killing jar: large-mouthed jar with lid, lined with cotton or paper towels, and sprayed inside with "Raid".

Title: NON-UTENSIL OUTDOOR COOKING by Sally Scholl

Concept: Outdoor cooking can be done in many innovative ways.

Specific Objectives

1. The student will experiment with outdoor cooking using few or no utensils.
2. The student will brake dependence on conventional outdoor cooking equipment.
3. The student will gain self reliance.
4. The student will prepare bacon and eggs in a paper bag.
5. The student will prepare a biscuit using only a stick as a utensil.

Materials-Specific

fire(barbecue or hibachi), charcoal or wood, matches, starter fluid or paper, 1 paper bag per person, 2 strips bacon per person, 1 or 2 eggs per person, 1 box biscuit mix, 1 stick per person, approximately $2\frac{1}{2}$ feet long and $\frac{1}{2}$ inch wide, salt, pepper, butter and jam.

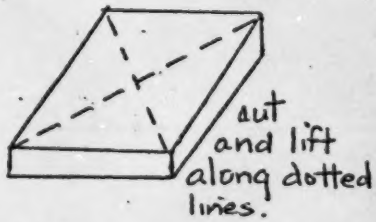
Materials-Resources

Roughing It Easy, Dian Thomas, Brigham Young University Press, 1975, New York.
Scout Manuals

Procedure-Teaching Technique

Demonstration and experimentation.

Procedure-Outline for Biscuit on a Stick



1. Build fire.
2. Cut a "V" on side of large Bisquick box.
3. Peel triangular section back.
4. Make a well in biscuit mix.
5. Pour 1 Tbs. water into well.
6. Stir with stick until soft dough forms around stick.
7. Mold dough around stick in hot dog bun shape.
8. Cook over hot coals until firm to touch.
9. Take off stick and spread with butter and jam.

Procedure-Outline for Eggs and Bacon in a Lunch Bag

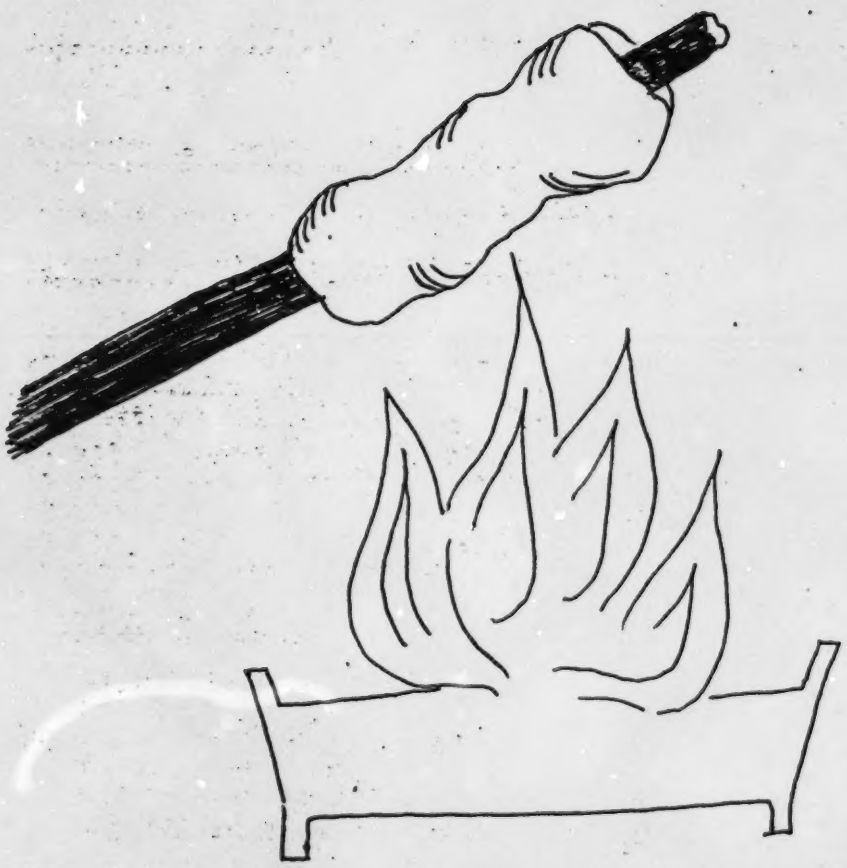
1. Cover bottom of lunch bag with 2 strips bacon.
2. Drop 1 or 2 eggs over bacon.
3. Roll sack down in one-inch folds and shove sharp-pointed stick through paper sack.
4. Hold bag on stick over hot coals but not in direct flame. This takes about 15 minutes to cook.

Evaluation Techniques

Eat the products. Group discussion to determine whether procedure of cooking was adequate.

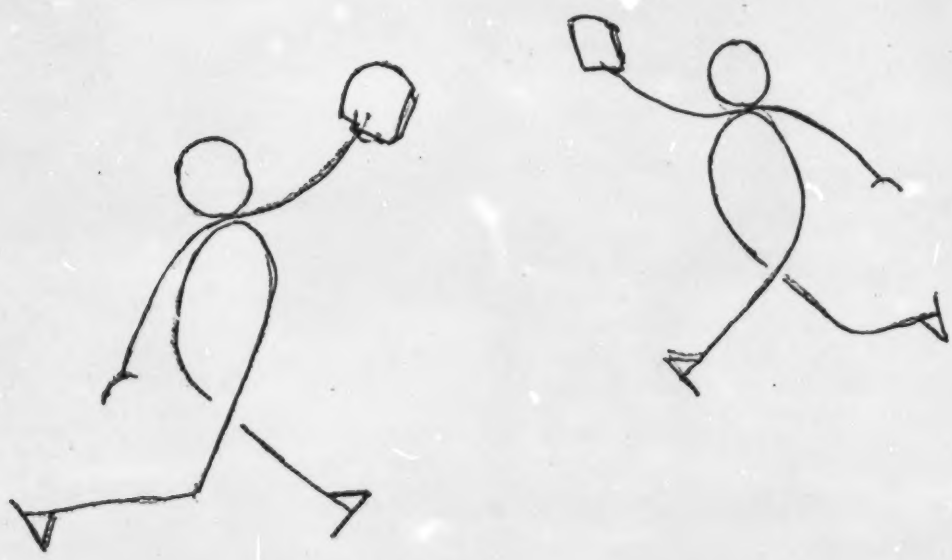
Possible Follow-Up Activities

Try other outdoor cooking with few utensils, such as: baking cake mix inside a hallowed out orange and placed in tinfoil and directly in coals, reflector oven, V-stick cooking, and pit cooking.



Peanut Butter and Jam Slap Sandwich

The purpose of this activity is to develop hand-eye co-ordination in children and adults. It consists of two partners, each spreading one slice of bread with either peanut butter or jam. The partners must spread their slice of bread with the one not selected. Delicately balancing the slice of bread in one hand they must move toward each other. The idea is to make a sandwich which is both edible and fun. The distance between the partners should be set at about 25 feet. There is no rule as to how fast they must move. Good Luck!



SAND CASTING

By: Connie Edwards
Mary Harris
Sally Scholl
Estella Stephenson

GOAL

To give the opportunity for a tactile experience of working with products of nature.

OBJECTIVES

1. To recognize and/or name and identify articles for decorating sandcasting.
2. To design an object of art

MATERIALS

1. Specific
   - A. Plaster of Paris
   - B. Wet sand
   - C. Water and container
   - D. Sandwich baggies or mixing container with stirrer
2. Resources
   - A. Personal contact with experienced person
   - B. Art in the Elementary School, California State Dept. of Education

PROCEDURE

1. Teaching techniques
   - A. Demonstrate a finished product of sand casting
   - B. Demonstrate the process
   - C. Motivate students to collect items for use with the plaster, such as shells, drift wood, rocks, etc.
   - D. Formulate in mind the desired end product
2. Directions
   - A. Form mold of desired shape in wet sand
   - B. Place ornamental shells or beach debris in molds or reserve them for later placement on surface of wet plaster
   - C. Measure out about 1 cup of plaster into baggie
   - D. Add about ½ cup of water (from the beach)
   - E. Knead water and plaster in baggie until well mixed and feels like ~~the~~ the consistency of thick honey and/or heavy cream (The mixture thickens as kneaded)
   - F. Pour plaster into mold
   - G. Let set until firm and cool to the touch
   - H. Carefully remove casting from the sand mold
   - I. Dispose of any baggies and other litter in trash containers

EVALUATION

1. Students compare and critique in a positive way on another's work
2. Teacher observes that students pridefully take home works of art
3. Students request other similar sandcasting experiences

FOLLOW UP

1. Extend casting to animal tracks
2. Make positive and negative plaster reproductions of fossils

SAND PAINTING

By: Connie Edwards
Estella Stephenson
Sally Scholl
Mary Harris

CONCEPTS

1. Sands can be used artistically
2. Black sand comes from lava
3. Green sand comes from olivine
4. White sand comes from coral

OBJECTIVE

To experiment with using Hawaiian sands, black, green, and/or white, to create a sand painting

MATERIALS

1. Specific
   - A. Black, green, and/or white sand in containers
   - B. White glue
   - C. Cardboard or paper for background
   - D. Box for catching sand
2. Resources
   - A. Kona Legends by Eliza Maguire, 1966
   - B. Hawaiian Legends of Ghosts and Ghost-Gods, W. D. Westervelt, 1974
   - C. Reproductions of petroglyphs

PROCEDURE

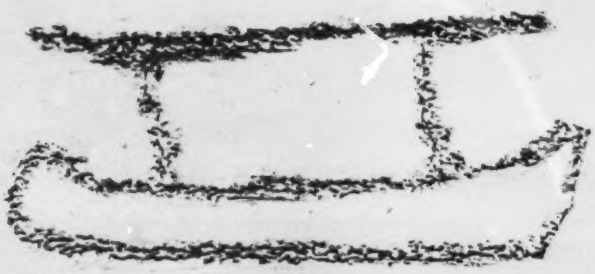
1. Teaching techniques
   - A. Motivate students through Hawaiian legends and petroglyphs
   - B. Demonstrate a sample of sand painting
2. Directions
   - A. Formulate picture in mind
   - B. Sketch picture lightly on cardboard or paper
   - C. Fill in pencil sketch with glue
   - D. Sprinkle on sand, let dry, tap off excess

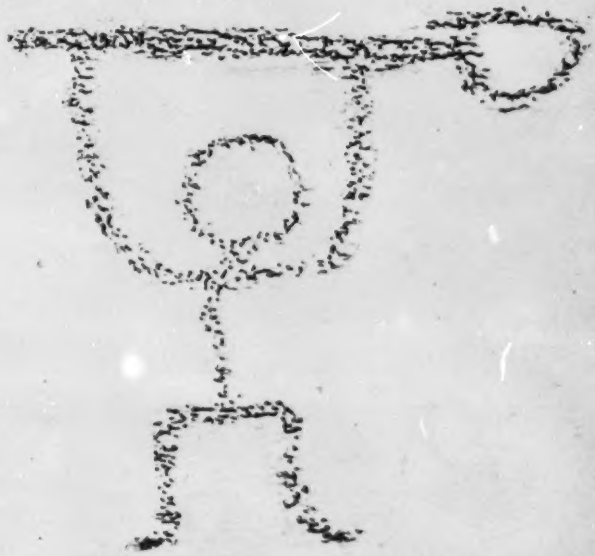
EVALUATION

1. Closure of activity
2. Students observe and give a critique of each other's work, stressing positive aspects only
   Continuing interest of students
4. Expanding project

FOLLOW UP

1. Use of other media to chronicle Hawaiian legends
2. Compare depicted legend with others
3. Write original story





JAPANESE FISH PRINTING

By: Larry Chin

CONCEPT

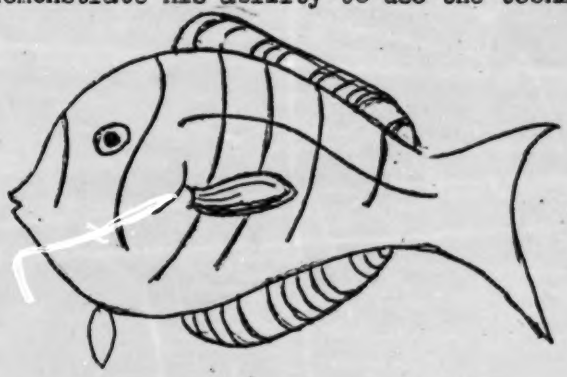
1. An ink print of a fish can be made with the use of the Japanese fish painting technique.

2. The technique can be used to record to record catches of fishes from a particular aquatic habitat.

GRADE LEVEL: Upper elementary - secondary

OBJECTIVE

The student will be able to demonstrate his ability to use the technique of Japanese fish printing.



MATERIALS

- Fresh fish
- Newspaper
- Rice paper or newsprint
- Plastic modeling clay
- Pins
- Water-base ink
- Stiff ½ inch brush
- Small watercolor paint brush

PROCEDURE

1. Clean the outside of the fish with soap and water and dry the fish well.

2. Place the fish on a table covered with newspapers. Spread the fins over some clay and secure them on top of the clay with pins.

3. Brush on an even coat of ink with the stiff brush. Leave the eye blank.

4. Place the piece of rice paper over the top of the fish.

5. Carefully use the fingers to gently press the paper over the surface of the fish. Then remove the paper.

6. Use the small brush to paint the eye on the rice paper.

7. List the name of the fish and the place and date of collection on the lower right corner of the print.

8. After several prints have been made, separate them into categories such as fresh water, salt water, brackish water, etc.

EVALUATION

The student will demonstrate the ability to use the technique of Japanese fish printing to the satisfaction of the teacher and student.

Display the prints in an artistic manner.

by Larry Chin
Mary Harris
Ann Manes
Herb Roberts

Title: INDIGO DYE AND TIE-DYEING TECHNIQUES

Concept: Students will learn to use plants and their parts from their environment to dye materials.

Specific Objectives: Students will be able to identify specific plants and know which parts are useable for the dyeing procedures.

Materials - Specific

Plant identification book, shovel, knife, pots, rubber bands and vinegar

Resource: Living with Nature in Hawaii, Petroglyph Press, page 29.

Prodedures: Discussion and Experimentation

Preceeding the process, a lecture of the types of plants to look for and methods of identification should be included. Discussions of which parts of the plant should be used and then groups set up to experiment about these hypothesis should be designated. Materials to dye should be fairly uniform and then tie-dyeing techniques can be used.

After each group has completed their dyeing, they can then see which process is best and carry forward other investigations.

Follow-Up

1. Discussion of how to improve techniques.
2. Comparison of commercial dyes to natural ones by redoing the same experiment with commercial products.
3. Try new plants and plant parts which will take the place of commercial dyes.

by: Estella J. Stephenson

Activity: SKETCHING

Grade level 4-12

Concepts: A visual image can be recorded by sketching.

Objectives:

1. Any desired subject can be sketched.
2. See and draw landscapes with awareness to spacial relationships.
3. Draw figures in proportion showing action in work and play as walking, running, sitting, etc.
4. Record visual study of animals and plant life found in environment areas, as tidepools, coastal valleys and mountains, etc.
5. Reproduce petroglyphs and other primative art forms.

Materials:

1. Sketching paper
2. Pencils (soft leador artist sketching pencils)
3. Eraser, art gum
4. Clip board or other firm surface to work on, such as, cardboard approximately the size of the paper.

Procedure:

1. Display a sketch of a familiar subject to be viewed.
2. Discuss techniques that make the picture pleasing to the viewer. The age of the students and level of awareness will dictate the depth of instruction required by the teacher.in areas of perspective, value, composition.
3. Students procede to sketch their chosen subject.

Evaluation:

1. Students share their creative work for positive critique of technique.
2. Students' interests motivates further sketching and demonstrates improvement in techniques.

Follow-Up Activities:

1. Give a title to picture.
2. Create a story about sketch.
3. Make a wet watercolor wash and when dry sketch in pencil lightly desired scene or object. Retrace sketch with black felt pen.
4. Sketch petroglyph story.
5. Make a repeat pattern for decorating tapa cloth.

Title: ECOSYSTEM by Michael Schoop

Concept: Items within the environment can be classified into specific catagories in a framework called the ecosystem.

Specific Objectives

The student will be able to:

1. Give examples of various objects in the environment and then classify them as they relate to the ecosystem.

2. Abstractly give examples of items within each catagory of the ecosystem.

3. Interact with the teacher on the possible orgins of matter to be classified.

4. collect field data listing objects from the environment in a certain catagory within the ecosystem framework.

Materials-Specific

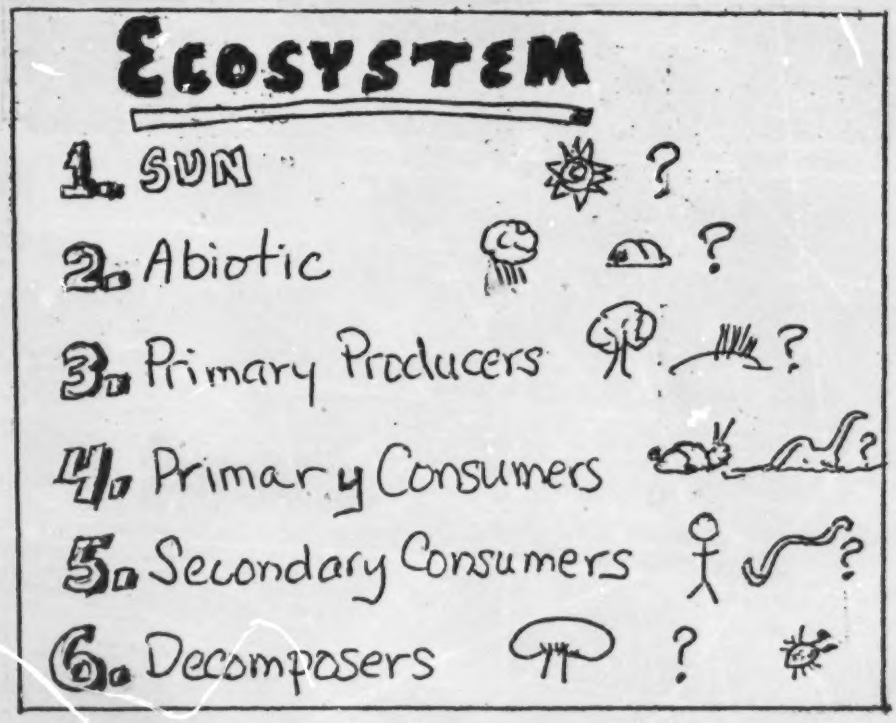
1. Note book (or paper on clip board)
2. Pencil

(Teacher)

1. Chart paper (3x4')
2. Marking pen

Materials-Resources

Make the following chart:



Procedure-Teaching techniques

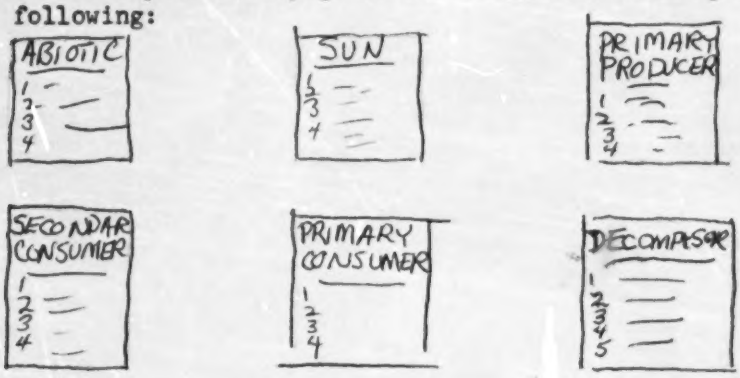
Lecture (Framework)
Field Study (Collection of data)
Discussion (Proper orgin of items)

Procedure- Outline'

1. Use chart to outline the structure of the ecosystem. Ask students of other possible items and their specific classification within the ecosystem.

2. Choose various items from the immediate enviromnemt and discuss the proper classification with the students.

3. Assign students to small groups (3-5). Each group is to have at least one tablet and pencil. It is best for each student to have a tablet and pen.
4.
4. At the top of each page of the tablet the heading should read the following:



5. The students are instructed to search the environment and to find as many items in each catagory or classification as possible.

Evaluation Technique

When the students return, the instructor asks each group to report seperately on each catagory. Evaluation (correct or incorrect) classification is made here. The teacher reacts immediately to incorrect responces, interacting with the students,questioning them on their judgement (this used be done with correct responces also).

Follow-Up Activities

1. Make a terrarium, making sure to include all parts of the ecosystem.
2. Make an aquarium, " " " " " " " " " .

Note: For younger students (1st and 2nd grade) these words may be substituted:
A ABIOTIC- things that were never alive
PRIMARY PRODUCER-Green Plants; PRIMARY CONSUMER-Green Plant Eater
SECONDARY CONSUMER-EATS OTHER ANIMALS
DECOMPOSER-THINGS THAT EAT DEAD THINGS

EXPLORATORY MUSIC

Mary Harris
Ann Manes
Herb Roberts
Estella Stephenson

Concepts: Music Has Origins in Nature

Specific Objectives:

a. Discover a basis for creating music of all kinds.
b. Utilize objects in the environment for making music.
c. Recognize and appreciate music that is different from one's cultural heritage.

Materials:

a. Specific:
   1. Specific sounds in the immediate environment.
   2. Use of body to create sounds. i.e. clapping, stamping, etc.
   3. Use of found objects with which to create sounds.
   4. Number cards-one to six.

b. Resources: Environmental Education: Music Outdoors, Marie Blanc, Oct, 1974
   Music Experience, Prior Weston School, London

Procedures:

a. Teaching Technique: Discovery approach.
   i.e. 1. Listening to sounds.
   2. Observing how sounds are made.
   3. Searching for appropriate means of making musical sounds.

b. Use of materials and directions:

1. Have the children listen to the sounds around them. Have them note differences in volume, pitch, rhythm.
2. Ask each child to think of his favorite number between one and six. That will be his or her number. When the teacher holds up a card with number one on it, all of the "ones" clap one time.
3. Continue with two, three, etc.
4. Use the numbers out of sequence.
5. Use other parts of the body for rhythms.
6. Have the children look for objects outdoors that will make sounds. i.e. pieces of wood, glass, shells, rocks, reeds, etc. (let <u>them</u> find them-don't suggest more than one thing.
7. Using the above clapping method(2), have the children make rhythms with the found objects.
8. Again, using the clapping method, have the children explore the use of their voices to make new sounds.

9. Combine body sounds(clapping, stamping,etc.) with found object sounds.
10. Use body movement with "instruments".
    Children are to listen and observe something in their environment(animals, plants, other). Then they are to become that object by moving like it. Movements are to be accompanied by music created by above methods.

Evaluation Technique:

Discussion of origins of music.
i.e. "How do you think wind instruments came into being?"
"What are some good rhythm instruments? Why?"
"How could you have music if you were lost at sea or alone on a desert?", or other discussion questions devised by the teacher.

Follow-up Activities:

1. Paint pictures of the body movement activity soon after it takes place.

2. Make a mural depicting invented instruments, real instruments, method of sound producing, etc.

3. Create stories about above activities.

4. Make musical instruments.

CAMPFIRE SONGS

by Mardi Lasell

GOAL

Singing can be used to bind a group

OBJECTIVES

The student will
activily particapate in group singing,
feel and part of a group, and
become calm before lights out.

MATERIALS

Specific

Campfire, familarity with a variety of songs and song types, and some form of musical accompaniment (perferably the guitar).

Resource

Girl or Boy Scout song manual, published folk song books, songs from past song leaders, Hawaiian Folk songs (available from House of Music, Ala Moana Center, Honolulu).

PROCEDURE

Teaching Method

Repetition and word (or chart) handout

Use of Materials

Songs are ordered according to vivaciousness of song (slower, more relaxing songs are placed last), song content (get aquainted songs are placed first), and length (long songs are not placed together).

The words to the songs are placed on handouts or charts to facilitate the student's ability to sing along with the group leader.

Songs are sung slowly by the group once.

Normal tempo is added to the song.

Songs are repeated nightly until the hand-outs or charts are no longer needed by the student.

EVALUATION

Evaluation is done by the measurement of student enthusiasm (requests for specific titles is an indicator) and by the ability of the student to learn and retain words.

FOLLOW-UP ACTIVITIES

A song period in the classroom.
Analysis of language and vocabulary in vintage songs.
Analysis of various song styles.
Introduction to musical accompaniment instruments.

SUGGESTED CAMP SONGS

This Old Man (to be sung between tables at meals)

This old man, he played one. he played nick-nack on my thumb

(Chorus)
With a nick-nack, billy-wack, give a dog a bone, this old man came rolling home

Substitute for first line the following:

This	old	man,	he	played	two,	he	played	nick-nack	on	my	shoe. (Chorus)
"	"	"	"	"	three,	"	"	"	"	"	" knee. (Chorus)
"	"	"	"	"	four,	"	"	"	"	"	the door. (Chorus)
"	"	"	"	"	five,	"	"	"	"	"	my thigh. (Chorus)
"	"	"	"	"	six,	"	"	"	"	with some sticks.	
"	"	"	"	"	seven,	"	"	"	"	up at heaven. (Chorus)	
"	"	"	"	"	eight,	"	"	"	"	on the gate. (Chorus)	
"	"	"	"	"	nine,	"	"	"	"	on my spine. (Chorus)	
"	"	"	"	"	ten,	"	"	"	"	with my hen. (Chorus)	

Flee (to be sung with a slap clap motion between two groups)

Flee
Flee, fly
Flee, fly, flew
Vista
Cum-ma-la, cum-ma-la
cum-ma-la vista
Oh no not, no not a vista
eenie meenie deci-meenie
ou-walla walla meenie x-
a-meenie zy-la meenine ou-
walla wa
beat billy oaten doten bo ba
ba beaten doten shhhhhhhhh

Flee
Flee, fly
Flee, fly, flew
Vista
Cum-ma-la, cum-ma-la, cum-ma-la
vista
Oh no not, no not a vista
eenie meenie deci-meenie ou-walla
walla meenie x-a-meenie zy-la-
meenie ou-walla wa

beat billy oaten doten bo ba ba
beaten doten shhhhhhhhh

Oh Young Rider (to be sung in round)

Oh young rider, apples dancing touche-a- moya
On your sted so fast and prancing touche-a- moya
What matters where I ride, just so long youre by my side
Touche-a-moya touche-a-moya

Alice (To by sung alternately between boys and girls)

Alice, where are you going upstairs to take a bath
Alice, with legs like tooth picks and a neck like a giraffe

Oh my goodness, oh my soul there Glug, glug, glug
goes Alice down the hole

Noah

Chorus
So rise and shine and give God your glory, glory
rise and shine and give God your glory, glory
rise and shine and give God your glory, glory
children of the Lord

The Lord said to Noah there's gonna be a floody floody
The Lord said to Noah there's gonna be a flood floody
get those children out of the muddy muddy
Children of the Lord (Chorus)

So Noah he built him he built him an Arky, Arky
so Noah he built hem, he built him and arky, arky
made it out of redwood barky barky
children of the Lord (Chorus)

The animal they came one, they came on by twoseys,
The animals they came on, they came on by twoseys, twoseys,
elephants and kangarooseys roosyes,
children of the Lord (Chorus)

It rained and rained for 40 dayseys dayseys
It rained and rained for 40 dayseys dayseys
drove those animals crazy crazy
children of the Lord (Chorus)

The sun came out and dried up the landy, landy
The sun came out and dried up the landy, landy
everything was fine and dandy dandy
children of the Lord (Chorus)

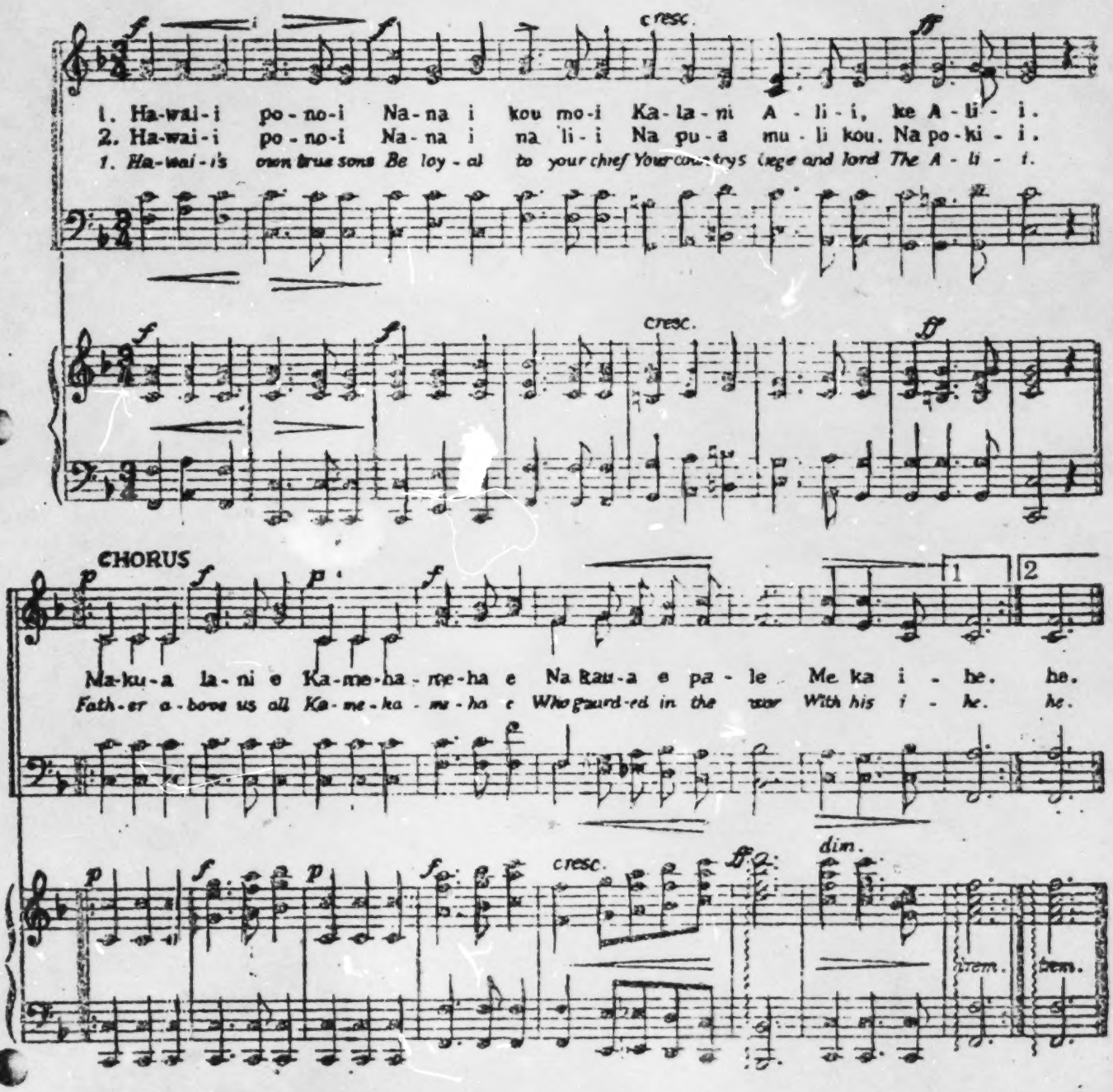
The More We Get Together

The more we get together, together, together
The more we get to gether the happier we'll be
for your friends are my friends and my friends are your friends
the more we get together the happier we'll be

HAWAII PONOI

THE STATE ANTHEM

Words by KING KALAKAUA
Music by Prof. H. BERGER



Title: ART FAIRE

by Larry Chin
Mary Harris
Ann Manes
Herb Roberts

Concept: A method for both teacher and student evaluation of what each has accomplished.

Specific Objectives

The student will be able to verbalize the meaning of each of his or her works and feelings about it.
The child will be able to identify certain personal goals.

Materials-Specific

In order to display as much of the child's work as possible, use any materials which you can suggest or the student selects.

Procedure-Teaching Technique

Discussion and possible selection of a theme.

Procedure-Outline

Each child should select a method of displaying their projects so that those which are similar are grouped together. The idea is to display as much of each child's work as possible. If it was done in a group then the whole group's work should be in the same area. If scrap material can be used to pin, glue, surround or enhance the work it should be suggested. This should create self pride and self worth and be only a positive experience.

Possible Follow-Up Activities

Probably the first exercize should be a re-evaluation after comparison of the works of others and how they would change their display.
Possibly re-do the project with the proposed changes.
Another possibility is to regroup the displays so that the projects are under a different classification.
A follow-up discussion of all the works collectively.

AWARDS

by Herb Roberts

Goal: Recognize each child for his unique qualities displayed in his group.

Specific Objectives

Create a positive atmosphere for each student.
Create a positive self image.

Materials

A homemade badge for each award.

Procedure

The camp should meet as a whole and each group should have awards given to the individual mambers. This should be a culminating activity to bring the camp together.

Some examples of the awards could be the "Kit Carson" award for trail blazing, the "Jacques Cousteau" award for snorkeling or the "Teachers' Teacher" award for the camper who taught the leaders the most.

Evaluation

This is an evaluation exercize but only positive statements should be made.

ALOHA
HAWAII
1976

THE CHILDREN'S EVALUATION

The campers sat in their activity groups so each person could respond orally to each question.

(Answers given more than once are not repeated)

1. What did you do that you had never done before?

pin hole camera	tie dying	
	chromatography	played with the sun
body conditioning	sand casting	so many dishes
solar cooker	astronomy	
	resin casting	

2. What was the most outstanding experience for your group?

cooking out
tie-dying
solar energy experiments

3. Name one thing you learned that you did not know before about the environment.

solar oven
that the road to the beach was steeper and longer than I thought
California has eight lane highways
That the Mainland has 30 channels on TV in some places
Sand casting
Part of California is muddy, like the Sacramento River Delta
What a jackfruit is
About seaweed and algae pressing
About papaya
What a neudibranch is (sea slug)
About plants growing on the school site
Name of plants
Tide dropped twenty feet
Color change in leaves, chromotography
Delta and Golden Gate bridge from slides

4. What did you learn about a person that you did not know before?

Art is strong and a good athlete and a good friend.
Mike is a good singer and good friend.
Dr. Keith knows plants.
Herb jokes around a lot.
Patrick is a nut.
Ed is smart.
Herbie is funny.
Ed is strict.
Darren's mother gets mad when he loses his frisbee.
I like Ann's laugh.
Ann swims really good.
Art is strong.
Eric learns new words.
Estella can draw real good.
Derrick's nose bleeds hard.
Mike plays guitar real good.
Uncle Herbie is very hairy.
Jean can walk ok with two toes.
Derren mobs people.

Free responses:

We wish we could stay here all summer.

We would like summer school on the mainland.

LEADER EVALUATION

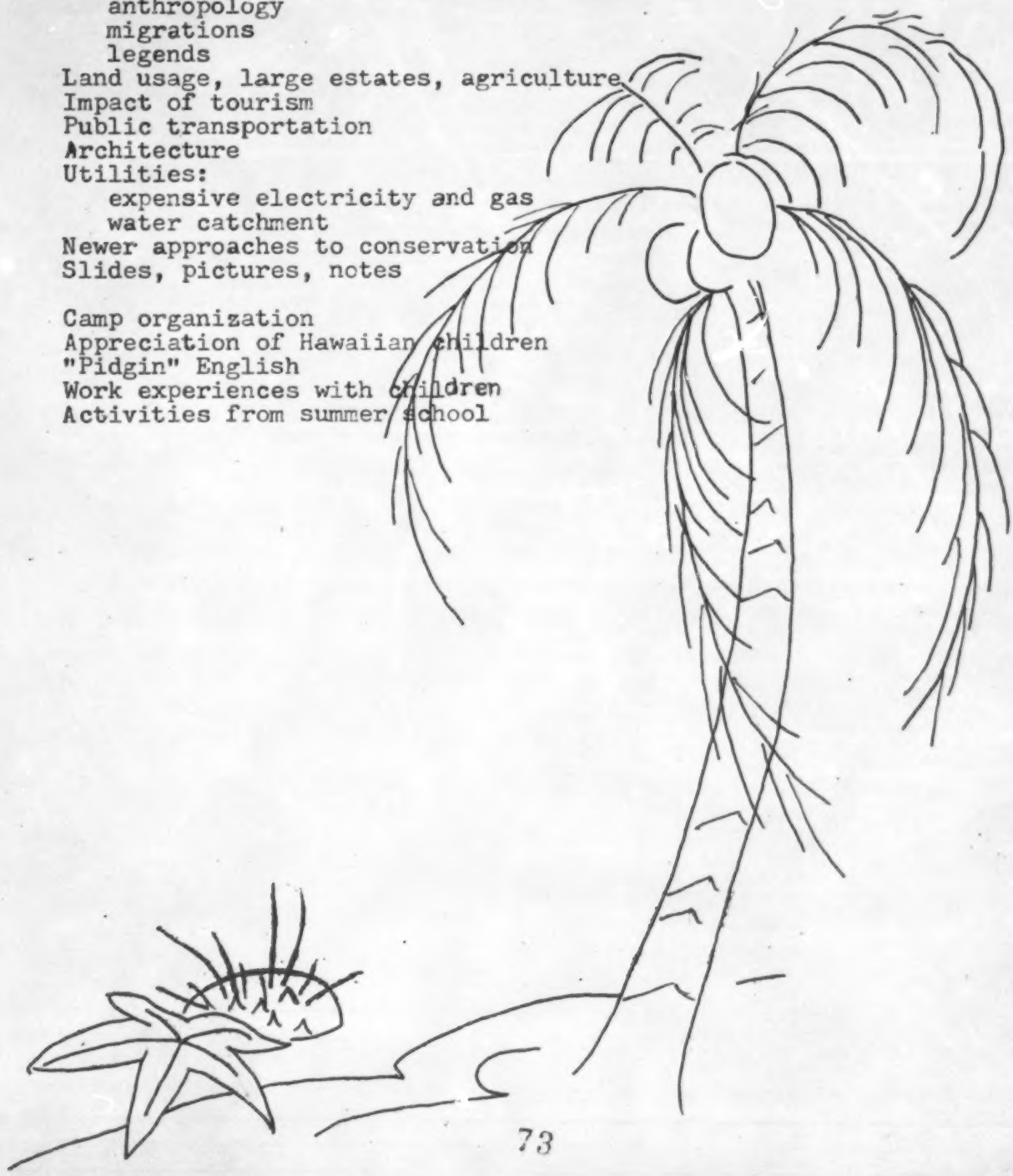
One of the goals for this experience was to list the important ideas which we would take back from Hawaii to the classroom in California. We agreed that the following were important outcomes:

Knowledge about geography, climate, plants, fauna, geology
Age of islands determined by coral reefs, volcanic activity
Knowledge about culture:
- anthropology
- migrations
- legends

Land usage, large estates, agriculture
Impact of tourism
Public transportation
Architecture
Utilities:
- expensive electricity and gas
- water catchment

Newer approaches to conservation
Slides, pictures, notes

Camp organization
Appreciation of Hawaiian children
"Pidgin" English
Work experiences with children
Activities from summer school



INSTRUCTIONAL SUPPLIES

Permanent, (Loan)

Movie camera
35 mm. camera
Cassette tape recorder
Slide projector
Nature keys (Hawaii)
Stories to read aloud
Compasses
Hand lenses
Jack-knives
Bioscope or microscopes
Binoculars
Dip nets
Plant press
First aid kit
Brushes, soft
Snorkels

Consumable

Film - color, black & white
Tape cassettes
Elmer's glue
Gluesticks
Plaster of paris
India ink
Rice paper
Heavy wire
Nails
Fishline, nylon
9 X 18 cardboard (for pinhole cameras)
Saran wrap & Baggies
Aluminum foil
Scotch tape
Masking tape
Herbarium paper
Butcher paper or large newsprint
Paper bags and cartons - lunch or grocery okay
Water color paints
Crayons, pastels
Clay
Art paper
Single edge razor blades
Lucite and catalyst
Ozalid paper
Felt pens
Pencils

EQUIPMENT LIST

Personal

2 pr. jeans or slacks or pant suits (wash and wear!)

light shirts or knit tops
sun hat and dark glasses
1 cardigan sweater
swim suit
1 raincoat or poncho

hiking boots optional
low healed or tennis shoes

heavy socks, cotton or wool

pajamas

light cotton underwear

sleeping bag or bedroll

towel, soap

toothbrush, paste

brush, comb

cosmetics (include talcum powder and skin freshener)

informal clothes for town

Optional

camera, film
hand lens
flashlight
pillow
pen knife
pocket guides to natural history
notepad, pencils
musical instruments
recording tape, recorder
portable typewriter
binoculars
Limited supplies can be purchased in Hawaii